Teaching and assessment practices of instructors in two public community colleges in Nevada

Simon A Lei
University of Nevada, Las Vegas
TEACHING AND ASSESSMENT PRACTICES OF INSTRUCTORS IN TWO PUBLIC COMMUNITY COLLEGES IN NEVADA

by

Simon A. Lei

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Master of Science
University of Nevada, Las Vegas
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Simon A. Lei

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Dean of the Graduate College

Examination Committee Member

Examination Committee Member

Graduate College Faculty Representative
ABSTRACT

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by

Simon A. Lei

Dr. Paul Meacham, Examination Committee Chair
Professor of Educational Leadership
University of Nevada, Las Vegas

The purpose of this dissertation was to examine variations of teaching and assessment strategies based on status and education level of faculty members at the Community College of Southern Nevada (CCSN) and the Truckee Meadows Community College (TMCC). To facilitate this study, a survey instrument was developed and distributed to 400 randomly selected faculty members employed at CCSN and TMCC, with an overall response rate of 45.8%.

Adjunct and nondoctorate instructors focused significantly more on lectures than their full-time and doctorate colleagues. Full-time instructors, however, placed significantly more emphasis on class discussion, slide/powerpoint presentation, lab teaching, and distance
learning compared to adjunct instructors. Full-time instructors placed significantly more emphasis on attendance/participation, quizzes, lab practicals, and research assignments, while placing significantly less emphasis on multiple-choice exams compared to adjunct instructors. Doctorate instructors focused significantly more on lab practicals than their nondonoratate colleagues. Adjunct instructors emphasized significantly more on recall of facts, critical thinking, integration of ideas, and application of theories than their full-time colleagues.

Recommendations based on survey results included participation in faculty workshops for teaching and technology enhancement, greater access to multimedia equipment for adjunct instructors, and more utilization of multimedia equipment as part of teaching tools for all instructors.
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CHAPTER 1

INTRODUCTION

Today's students face an increasingly challenging world where a community college education was once adequate. But this may no longer hold true. Students who continue their education beyond community college and into a four-year college to obtain at least a bachelor's degree increase their probabilities of making a significant contribution in the world as well as attaining personal affluence. In order to accomplish this, educators must be prepared to employ various instructional and assessment techniques in the classroom to prepare students for success at the four-year college level.

During the 1970s, the increased employment of adjunct faculty in two-year comprehensive community colleges to teach various courses led to such questions as to what extent the teaching and assessment strategies differ between part-time and full-time faculty (Bowles 1982). Comprehensive community colleges offer a wide range of programs, including general education, university transfer, vocational education, applied science and technology, as well as continuing and developmental education. These
colleges rely heavily on the first-hand knowledge and experience that adjunct instructors bring to the classroom (Lankard 1994). Proponents of hiring adjunct faculty cite economic advantages: cost savings with no fringe benefits and staff flexibility (Bowles 1982). Adjunct instructors often offer up-to-date knowledge and skills in specific occupational areas, and exhibit a willingness to teach at off-campus sites and to teach during odd hours (Lankard 1994). However, critics have indicated that adjunct instructors appear to have less teaching experience, limited access to computers/multimedia equipment and secretarial assistance, as well as less commitment to students, colleagues, administrators, and professional activities than their full-time counterparts (Cohen and Brawer 1977).

The Community College of Southern Nevada (CCSN), serving over 34,000 students, is the fastest growing college in southern Nevada. The Truckee Meadows Community College (TMCC), serving over 11,000 students, is the fastest growing college in Northern Nevada. Both institutions offer programs leading to associate degrees and certificates in academic and occupational areas (CCSN and TMCC Catalogues 2001-2003). Both institutions have multiple campuses with education or high tech centers.

Off-campus classes are held at education or high tech centers located in rural, urban, and suburban areas. Each high tech center includes academic and computing centers, a
student center, faculty and administrative offices, and several classrooms with multimedia equipment. Education or high tech centers for the college are funded by the Nevada Legislature for the college (CCSN Catalogue 2001-2003).

Statement of the Problem

Educational systems seem to be rapidly affected by new theories, approaches, and discoveries. Since contemporary research reports that most children are visual learners, not auditory or kinesthetic learners, there may no longer be three styles of learning in the classroom (McCormik 1999). With the presence of television, computers, and other modes of communication that present visual learning opportunities, educators have a new audience to which that teaching should be directed. Besides this challenge, instructors, including those at the college levels, are being held increasingly accountable for how each student learns and achieves success in their classroom (McCormik 1999).

Stakeholders involved in the education of today's students are asking critical questions concerning the training of community college instructors. Most importantly, are they up-to-date on current knowledge and theory in their disciplines and pedagogy? Can instructors apply this knowledge in order to prepare students for the new millennium? Are today's instructors capable of using new techniques effectively to reach all types of student
learners in order to ensure their success in higher education? Are effective instructional methods being utilized in the classroom? Are instructors capable of applying methods of assessing student outcomes? Do instructors know how to ensure achievement of mastery levels of learning? These pressing concerns need to be addressed and investigated.

Purpose of the Study

Today, community colleges, both nationally and in the state of Nevada, serve multiple educational purposes for their citizens. There are six major educational areas: occupational/vocational training, general education, university transfer preparation, continuing education, remedial education, and developmental education. How can higher education administrators in Nevada ensure that college classrooms are constantly staffed by high quality, well-trained teachers in each of these six educational areas in order to best serve students with various backgrounds and learning styles? Do instructors employ a variety of instructional and assessment strategies to accommodate these differences? Answering these questions are of central importance to improving educational outcomes. It is especially critical given the large number of new community college instructors who are needed to accommodate the rapidly growing student population that
has increased rapidly since the mid-1980s. College faculty resignations and retirements in Las Vegas, Nevada, have added to this problem. However, a search of previous research studies has failed to reveal any relevant investigation of the relationship of instructor-related factors in Nevada community colleges. Beyond Nevada, only two closely related research studies were found that compared instructional and assessment techniques among instructors in public community colleges nationwide (Bowles 1981 and 1982).

The need to study instructor-related factors associated with the instructional and assessment strategies they employ in community college and beyond is vital. Therefore, this study was a pedagogical evaluation of instructors, aiming at investigating the relationship of instructor-related factors to the types of community college teaching and assessment methods they use. It was a survey study involving faculty from the Community College of Southern Nevada (CCSN), located in southern Nevada and Truckee Meadows Community College (TMCC), located in northern Nevada. Both CCSN and TMCC are members of the University and Community College System of Nevada (UCCSN). The objective of this study was three-fold: 1) to detect differences in teaching strategies with respect to current faculty status and educational level, 2) to detect differences in assessment practices with respect to faculty status and educational level, and 3) to
detect differences in course objectives associated with student competencies based on faculty status and educational level.

This study proposed a pedagogical evaluation from an instructor's perspective to examine instructional and assessment practices in relation to faculty status and educational level. This study addressed general demographics of faculty members and investigated the linkages of these factors with the instructional techniques they use in CCSN and TMCC. This study also provided insight into the types of assessments and course objectives used, measuring the mastery level of student learners in both institutions.

Conceptual Framework

Adjunct instructors appear to have less teaching experience, less commitment to students and colleagues, and less access to media or instructional supplies than their full-time counterparts (Cohen and Brawer 1977; Lankard 1994). Despite this more limited access to certain media and lower pedagogical skills, adjunct faculty do not require less work from students and the instruction provided by adjunct faculty is not always inferior to that provided by full-time faculty (Cottingham et. al 1981). Among community college faculty, possession of a terminal (doctorate) degree does not appear to affect overall course objectives, level
of teaching satisfaction with course materials, and attitudes toward course exams (Bowles 1981).

This study was intended to reveal if faculty members of various status (full-time vs part-time) and educational level (doctorate vs non-doctorate) used different teaching and assessment practices to measure both achievement and mastery. It was assumed that instructional and assessment strategies have impacted the mastery level of students and, consequently, their competencies when they later entered the workforce or the four-year college environment. No empirical evidence is currently available to support the contention that adjunct faculty with lower educational level and limited pedagogical experience provide less effective instruction and assessment than do full-time faculty in the state of Nevada. The type of information examined in the present study involved an overall summary of various teaching and assessment practices in CCSN and TMCC. The array of learning and assessment strategies, along with course objectives analyzed in this study addressed visual, auditory, and kinesthetic types of learning styles.

Research Questions

The objective of this study examined: 1) the differences in teaching methods linked with the current faculty status and educational level, 2) the differences in assessment practices linked with faculty status and
educational level, and 3) the differences in course objectives linked with faculty status and educational level. Specifically,

1) Was faculty status (full-time vs part-time) related to the array of instructional strategies they use?
2) Was faculty status related to the array of assessment strategies they implement?
3) Was faculty status associated with the array of course objectives they wanted students to obtain?
4) Was faculty educational level (doctorate vs nondoctorate) related to the array of instructional strategies they use?
5) Was faculty educational level related to the array of assessment strategies they implement?
6) Was faculty educational level associated with the array of course objectives they wanted students to obtain?

Research Design

A survey instrument was constructed and distributed to 400 randomly selected teaching faculty members of CCSN and TMCC during the spring 2003 Semester for the purpose of collecting the key data for this study. Because there were considerably more faculty members employed at CCSN than at TMCC, a total of 270 and 130 surveys was sent to CCSN and TMCC, respectively. Once collected, the data were converted
into a tabular format, along with a narrative interpretation. This survey instrument consisted of 18 closed-ended questions to which CCSN and TMCC faculty members were asked to respond. These questions were designed to solicit information about their demographic and educational backgrounds, pedagogical experience, instructional and assessment techniques, and types of course objectives which they employ. Closed-ended questions of this survey instrument were split into several major categories: teachers' educational background and demographic information, instructional and assessment techniques, and course objectives linked with student competencies.

The research study concluded with a presentation of findings and recommendations based on the survey results, along with suggested future research directions. In order to complete the research study, preliminary library research was conducted on what has already been documented concerning teaching techniques in the classroom that address visual, auditory, and kinesthetic learners. This is presented in Chapter 2. Recommendations were made accordingly after a careful examination and analysis of the survey information.

Research Methodology

Descriptive statistics were performed in the analysis of educational background and demographic data of faculty members. Mean values with standard errors were used in the
analysis of instructional techniques, assessment techniques, and course objectives linked with student competencies. Nonparametric inferential statistics were performed because dependent variables were measured on an ordinal scale. Mann-Whitney $U$ test was employed to detect significant differences in instructional and assessment techniques, along with linkages of course objectives to student competencies based on faculty status and educational level. Statistical significance was determined at $p < 0.05$.

Significance of the Study

It has been found that a variety of instructional and assessment practices are employed by faculty members and these are related to faculty status and faculty educational level (Bowles 1981 and 1982). Through the present day, however, higher education administrators continue to wonder if variations of instructional and assessment practices still exist with respect to faculty status and educational level in other settings and institutions.

Since adjunct instructors are employed primarily for their professional competence rather than pedagogical training, it may well be that they should be trained in appropriate pedagogical skills in the classroom at the time they are hired and assigned teaching positions at CCSN and TMCC. Despite teaching at off-campus sites and teaching during odd hours, it seems logical that adjunct instructors
should have equal access to instructional support and materials in order to improve instruction, as well as to diversify teaching and assessment practices.

Community college teaching is complex, dynamic, and difficult. There is not a simple set of routine tasks with universal teaching and assessment practices to guide it. This view of teaching has great implications for higher education (Ornstein 1988). In this view, institutional reform or improvement cannot take place without the active participation of community college instructors. Their knowledge is too important and too crucial to the academic success of students for it to be ignored; yet, it often is overlooked (Ornstein 1995).

Delimitations and Limitations of the Study

Delimitations

Due to time and resource (financial) constraints, this study was delimitied to populations of instructors in only two public community colleges of Nevada (CCSN and TMCC). Similar results might not be found with instructors in rural and suburban settings.

Limitations

Since various self-report items were used to collect data, this study was highly dependent upon the respondents reporting fully and accurately on the data requested. Efforts were made through structured follow-up requests in...
order to secure as high a return rate as possible. However, not all respondents answered all of the survey questions. A number of questions were left blank, resulting in an uneven distribution of group sample sizes. Statistical analyses were not performed for the "Other, (please specify)" categories in this survey due to very limited sample sizes when comparing with other measured variables (Appendices VI-VII). Factorial (two-way or higher-order) or multivariate analysis of variance, Spearman rank correlations, and multiple regression analysis, using faculty status and educational level as main variables, were unable to perform due to an uneven distribution of group sample sizes.

Moreover, the survey instrument itself was too broad and did not focus on highly precise instructional learning techniques that coincided with particular outcomes relative to mastery assessments. The survey was limited to three selected types of learners-- visual, auditory, and kinesthetic-- and did not lend itself to the types of data needed to critically analyze other instructional techniques or assessment frameworks. Therefore, conclusions were limited to these aspects of the learning process.

Furthermore, this study did not attempt to differentiate between those instructors who taught freshman-level (non-major and major) courses and those instructors who taught sophomore-level (major) courses. An assumption was made that results would legitimately generalize both
freshman and sophomore levels.

**Definition of Terms**

**Adjunct faculty**-- Postsecondary instructors who work part-time at a particular institution, usually do not receive health benefits, pension plans, and often do not participate in regular departmental or institutional activities and annual professional development.

**Assessment**-- The full range of procedures used to gain information about student learning. Formal assessments include tests, quizzes, classwork, homework, research papers, projects, learning and oral presentations.

**Continuing education**-- Non-credit courses and programs are offered to target specific populations, and fill specific educational needs outside the normal academic disciplines (McGee 1996).

**Demographic data**-- Data that give general background information regarding the teachers, such as number of years taught and grade level (Anderson 1999).

**Developmental education**-- Courses are intended to help students build their skills to a level that will enable them to succeed in occupational and university parallel courses. However, these courses do not transfer to other educational institutions and may not be used to meet the requirements for Associate degrees or certificates (CCSN Catalog 2001-2003).
Doctorate instructors-- Teaching faculty members who possess a Ph.D or any doctoral degree.

Faculty status-- The legal or professional rank or position of an instructor in a higher education institution. In this study, faculty status is classified as full-time and part-time instructor.

General education-- Math, science, liberal arts, and humanity courses, which, although often transferable, are offered in keeping with a goal of general educational enrichment (McGee 1996).

Likert scale-- A way to rate a response on a graduated scale usually ranging from one to five, depending upon the strength of the response (Anderson 1999).

Nondocumental instructors-- Teaching faculty members who are classified in one of the following educational categories: Less than bachelors, bachelors, master's, and master's plus 30 (UCCSN Academic Faculty Salaries 2003).

Qualitative analysis-- A descriptive analysis that uses words, as opposed to numbers, to describe the results of a survey or questionnaire (Anderson 1999).

Quantitative analysis-- Research which uses quantitative methods, or numbers, such as mean and frequency, to describe the results of a survey or questionnaire (Anderson 1999).

Occupational/Vocational education-- Education which takes place in a classroom devoted to teaching career
skills to students, such as computers, keyboarding, drafting, automotive, graphic arts, and other related subjects (Daggett 1992).

**Reliability**-- The knowledge that survey or test results would be the same if administered to another similar group at another time (Anderson 1998).

**Remedial education**-- Courses in the basic academic skills designed to give learners the opportunity to eventually achieve a post-secondary level of competency (McGee 1996).

**Test**-- A particular type of assessment consists of a set of questions administered during a fixed period of time for students (Linn and Gronlund 2000).

**University transfer**-- Courses and programs that are designed for transfer to a four-year college or university (McGee 1996).

**Validity**-- The knowledge that the survey or test instrument actually measures the elements it is designed to measure (Anderson 1998).

Organization of the Dissertation

The purpose of this study was to examine differences in instructional and assessment techniques among instructors of various status and educational levels in two public community colleges, CCSN and TMCC, in Nevada. The statement of problem, purpose of study, conceptual framework, research
questions, significance and limitations of the study, as well as definition of terms have already been discussed.

Chapter 2 includes an extensive presentation of critiques of previous research studies, literature related to the present study, along with dependent and independent variables on which the present study was to focus.

Chapter 3 describes the research questions and design, content of the survey instrument, and methods of data collection and data (statistical) analysis. In the fourth chapter, results of statistical analyses are reported, and the survey findings in response to the research questionnaire are analyzed. In the final chapter, the study is summarized, conclusions are presented, as well as recommendations based on survey results and recommendations for further research.
CHAPTER 2

REVIEW OF LITERATURE

Introduction

This chapter reviews the literature that pertains to instructional and assessment practices of instructors in community colleges nationwide. The literature review follows 17 major lines of inquiry related to the present study: 1) part-time and full-time faculty, 2) styles of student learning, 3) motivation for learning, 4) effective teaching strategies, 5) student evaluation, 6) norm-referenced and criterion referenced tests, 7) benefits and drawbacks of using objective tests, 8) benefits and drawbacks of using essay tests, 9) essay versus objective tests, 10) constructing teacher-made tests, 11) laboratory teaching, 12) cooperative learning, 13) performance assessments, 14) benefits and drawbacks of performance assessments, 15) distance learning, 16) benefits of distance learning, and 17) drawbacks of distance learning.

Comparison of Full-time and Part-time Faculty

During the 1970s, the increased employment of adjunct
faculty in two-year community colleges to teach various courses led to such questions as whether the teaching and assessment strategies of part-time and full-time faculty were similar or different (Bowles 1982). Community colleges including special programs for adult students, vocational/technical training, adult basic education, and English as a Second Language (ESL), rely heavily on the first-hand knowledge and experience that adjunct instructors bring to the classroom (Lankard 1994). Proponents of hiring adjunct faculty cite economic advantages: cost savings with no fringe benefits and staff flexibility (Bowles 1982). In fact, adjunct faculty members nationwide typically receive low salary with no fringe benefits, no pension plans, no office space, and have no financial commitments for continued employment (Lankard 1994). Adjunct instructors often offer up-to-date knowledge and skills in specific occupational areas, and exhibit a willingness to teach off-site classes and classes held at unusual hours (Lankard 1994). Nevertheless, critics of increased adjunct faculty ask whether the transiency of adjunct faculty positions makes such faculty less inclined to spend time preparing lesson plans for courses that they may never teach again (Bowles 1982). Adjunct instructors appear to have less teaching experience, as well as less commitment to students, colleagues, administrators (departmental/institutional service), and professional activities than their full-time
counterparts (Cohen and Brawer 1977).

Previous research studies have shown that lecture remains the most popular instructional mode for instructors in community colleges nationwide, in spite of the drawbacks that methodology textbooks and empirical studies have publicized about lecture (Traver 1973; Bowles 1981 and 1982). Both full-time and adjunct instructors apparently see themselves as transmitters of knowledge who find lecture an economical way of presenting factual information to students (Bowles 1982). Traditionally, lecture has been the mainstay of college instruction. Since the establishment of Harvard in 1636, lecture has been the backbone of instructing young adults in a college setting (Rudolph 1962). Community college instructors do not seem set apart from their university counterparts (Milton 1980).

Class discussion is the second most popular teaching strategy among community college faculty, although discussion is far below lecture in popularity (Bowles 1982). Both full-time and part-time instructors seem to believe in the effectiveness of discussion as an educational tool (Bowles 1982). Interaction in class discussion clearly allows for attainment of learning aims that lecture cannot sustain such as active thought, development of problem-solving abilities, and appreciation of a work of art (McKeachie 1969). However, only a limited number of instructors use extensive student oral presentations,
simulation and gaming techniques, or field trips to attain learning objectives.

There is a greater use of media by full-time instructors than by part-time instructors (Friendlander 1979). Generally speaking, access to computer and technology services is considerably easier for full-time faculty since part-timers must often make a special trip to campus to preview software and may not arrive on campus early enough before a class to fetch needed materials from a media center (Bowles 1982). Also, many of the part-timers teach in the evenings and on weekends when audiovisual personnel are not on campus. If a problem arises with a piece of equipment, part-time instructors may not be able to find anyone to assist them. It takes only a few discouraging incidents to deter the use of media altogether. Research studies have also reported limited support services from media centers for adjunct faculty members (Hoenninger and Black 1978; Cottingham et al. 1981).

Despite a limited access to certain media, research studies have shown that adjunct faculty do not require less work from students than do their full-time colleagues and that the instruction provided by adjunct faculty is not inferior to that provided by full-time faculty (Cottingham et al. 1981). The findings do suggest, however, that part-timers tend to work in isolation from the rest of the faculty and participate little in adoption of instructional
materials such as textbook selection.

Black (1981) proposes that many adjunct faculty members want to feel part of the community college faculty team and need instructional support services, along with faculty and professional development as much as their full-time counterparts. Despite the importance of professional development, few community colleges regularly offer such activities to their adjunct instructors. Orientation is a major component of the socialization process in terms of developing employee loyalty, commitment, and productivity. During the orientation period, adjunct instructors should become familiar with the campus, full-time instructors, and the location of instructional supplies and equipment. This orientation period should also allow adjunct faculty to become familiar with official institutional policies and procedures, along with providing them a handbook detailing the content of course syllabi, as well as student performances and expectations.

Periodic supervision and evaluation of adjunct faculty instruction are required. Since many adjunct instructors have limited pedagogical skills, peer observations and reviews from experienced supervisors and full-time instructors would provide an instructional support (Lankard 1994). Periodic classroom observations with constructive comments made by a full-time colleague, the department chair, or dean would elevate the quality of adjunct
instructors’ performance levels.

From my perspective, community college administrators should cordially invite adjunct instructors to selected meetings that are convenient to them, so they can voice their opinions or concerns regarding instructional topics and other academic issues. Adjunct instructors are strongly encouraged to get involved in a number of institutional, departmental, and community activities, as well as to participate in selected annual educational conferences. Adjunct instructors may enroll in certain graduate courses, such as multiculturalism, classroom assessments, effective teaching strategies, postsecondary curriculum and instruction, instructional design and methods, and teaching in higher education. All of these activities, I believe, are considered as part of their professional development and are likely to promote the instructional quality of adjunct faculty members in community colleges.

Types of Academic Degrees

In the past, Cohen and Brawer (1977) observed that an increasing number of seasoned community college faculty are earning doctorates, although community college administrators are not inclined to hire faculty with recently acquired doctorates. Increased pay and prestige are two primary reasons for two-year college instructors’ attainment of the doctorate as part of their professional
development (Bowles 1981).

Among community college faculty, possession of the doctorate does not seem to affect overall course objectives, level of teaching satisfaction with course materials, and attitudes toward course exams (Bowles 1981). In fact, doctorate and nondoctorate English faculty nationwide appear to be quite similar in instructional practices (Wolfle and Kidd 1972). However, full-time faculty members participate in textbook selection, engage in staff development, have higher salaries and fringe benefits, feel more professionally secure, and often have greater access to instructional aids, such as computers and secretarial assistance, compared to part-time faculty members (Bowles 1982).

Prior to 1950, faculty members were prepared much like secondary teachers, except that junior college instructors generally had more master's degrees (Koos 1925; Medsker 1960). Reeves (1931) found that the North Central Association of College and Schools required the master's degree or equivalent, but that the Southern Association had less rigorous standards; a bachelor's degree was the minimum educational level expected. Fewer faculty members in the two-year colleges in that region had earned a master's or the equivalent (Reeves 1931). Similarly, Punke (1953) found geographical differences in the level of education of faculty at community colleges. More faculty members in
urban area have earned a doctoral degree compared to rural areas.

Since 1950, the pattern of academic preparation for teaching has reflected an increasing attainment of advanced degrees (Garrison 1941; Colvert 1955; Medsker 1960; O'Banion 1971; McCormick 1983 and 1984; Cohen and Brawer 1989). According to a 1984 Carnegie faculty study, 22 percent of two-year college faculty members had earned doctorate degrees, but these were often earned during their teaching careers in community colleges, and not as preparation for their careers (Cohen and Brawer 1971 and 1989).

The Teaching Doctorates

The most beneficial aspect for faculty in community colleges is the type of degree and their graduate background. Bells (1934) and Garrison (1967) both found that faculty members themselves expressed a need for more professional education, including curriculum and teaching methods, and strongly recommended the value of a broad general education for instructors instead of a narrowly specialized one. Bells (1934) discussed the Doctor of Education (Ed.D.) degree for administrators and faculty in junior colleges, favoring it for the depth and breadth of knowledge it provided and the reduced emphasis on research. He favored the type of dissertation that would be an "organization" of knowledge rather than an original
contribution to it. Johnson (1939) called for a specialized doctoral degree for junior college instructors—a degree in general education that included professional education. Some doctoral programs would allow faculty to remain current in their teaching fields and still pursue a doctorate that is not research focused (Jantzen and Cobb 1958). Kelly and Wilbur (1970) reported that the master's degree was standard and that doctoral degrees were seen as too specialized for junior college teaching. They looked with great expectations toward the emerging Doctorate of Arts (D.A.), a degree that never gained legitimacy, but seemed suited to the needs of community college instructors. The D.A. degrees allow intensive study of an academic area, as well as teaching methods appropriate for the diverse clientele of community colleges (Hawthorne 1994).

The advent of the D.A. programs occurred during the 1960s, a decade of unprecedented expansion in higher education. Doctor of Philosophy (Ph.D.) programs are overly concerned with specialized research and undergraduate teaching is being neglected at a time when the community college sector, in particular, is rapidly expanding (Glazer 1993). The D.A. was originally endorsed in preference to the Ed.D. for liberal arts or science majors as a professional degree combining disciplinary specialization, the study of related disciplines, professional preparation in a teaching field, one or more internships, and a
The teaching internship is perceived as the component that most clearly distinguishes the D.A. from the Ph.D. The D.A. differs most dramatically from the Ph.D. in its de-emphasis of the traditional research dissertation, although some programs retain a traditional dissertation but is not the general practice (Glazer 1993). The D.A. was perceived as a major innovation that could reform the doctorate by changing its focus from the development of research scholars to the preparation of college teachers (Glazer 1993). However, three major disappointments of the D.A. degree have been the lack of financial support, as well as the negative reaction of colleagues and institutions toward the D.A. degree (Glazer 1993). These colleagues imply that the D.A. programs were not as academically rigorous as the Ph.D. programs, and some institutions had terminated D.A. degrees in favor of the Ph.D degrees (Glazer 1993). While D.A. graduates are relatively satisfied with their academic experience, the perceptions of others about the D.A. and the dominance of the research Ph.D. inhibit its growth and threaten its survival (Glazer 1993). There is a continuing dichotomy between individuals who do research and individuals who teach, a dichotomy that remains to be bridged on both the theoretical and practical levels (Glazer 1993).
Styles of Learning

Students learn in diverse ways, and instructors should respect, value, and nurture that diversity by attempting to address those individual learning styles in the preparation and presentation of the material they teach. McCormick (1999) suggested that many American students are now visual-dominated learners, followed by auditory- and kinesthetic-dominated learners. McCormick (1999) further states that teaching in today's secondary and post-secondary schools is more challenging than it was two or three decades ago. Instructors at the university level need to be aware that today's students will often be more effectively taught with a greater variety of instructional strategies in order to accomplish learning goals.

In response to different learning styles and modalities, Dunn and Dunn (1993) developed a "Learning Styles Model" over the last 25 years to address different types of learners. This model utilizes a clinical or diagnostic teaching framework. The model is based on the theory that individual students learn best in different ways. A productive approach to teaching is to identify the ways in which an individual student learns best, and then use that information to plan instructional procedures and arrange learning situations to accommodate the individual student learning styles or preferences. If the instructional situation is organized in a manner that takes
advantage of the students' learning strengths, the rate and quality of learning are likely to improve.

Another theory addressing learning styles focuses on how to motivate students to learn. In 1990, the Office of Educational Research and Improvement held a national conference on student motivation in order to answer questions as to what part students should play in learning, what their responsibilities are as a learner, and what educators can do to elevate the amount and quality of student effort to the levels that academic excellence requires. The term "Motivation to Learn" is defined by Marshall (1987) as the meaningfulness, value, and benefits of academic tasks to the learner--irrespective of their intrinsical interest. Ames (1990) believes that motivation to learn is characterized by long-term, quality involvement in learning and commitment to the process of learning.

Motivation for Learning

Harris (1991) offers suggestions for motivating students that would increase their academic achievement in the classroom. He suggests teachers should spend more time explaining why they teach certain topics, and why the topics, approaches, or activities are important and interesting to learners. Teachers should reward correct behavior and answers, rather than criticizing unwanted behavior or answers. Students respond with interest and
motivation to teachers who appear to be caring and humanistic. Teachers should care about their students by asking about students' academic progress, concerns, and goals. A major key to motivation is the active involvement of students in their own learning. Although lecturing is the most common instructional mode in community colleges, students must also get actively involved in activities with hands-on experience, group research projects, and group problem-solving exercises (Bowles 1981 and 1982).

Educators can help students make the effort required to learn by explaining clearly to students regarding course objectives and requirements. Instructors can also help students by guiding them with homework assignments and offering suggestions when studying for tests. Teachers can also give practice on instructional objectives by providing extensive feedback on quizzes, homework, and tests, as well as by giving some credit for successfully completing homework. More than one-third of high school graduates who are college-bound are unprepared to engage in effective academic work. These students spend most of their first year in remedial courses and in learning how to study on their own (Brown et al. 1992).

By beginning a lesson with examples, evidence or stories, and arriving at conclusions later, students would maintain interest and have increased motivation. Students would be much more committed to learning activities that had...
significant values for them. In my opinion, instructors should make learning visually by attaching images to the ideas they want to convey. Instructors must use positive emotions to enhance student learning and motivation. Strong, long-lasting memory is connected with the emotional state and experience of the learner. Being energetic in teaching is also a motivating factor; adding energy to the ideas can further enhance learning and commitment to the ideas. By designing more group projects and assignments, students who teach each other often learn better than if they are learning alone.

Learning experiences should be fun. Whenever possible, teachers should strive to make learning both mentally and physically active. I believe that students are responsible for active learning, rather than passive learning by simply soaking up lengthy lectures. Instructors should attempt to connect ideas, concepts, and conclusions with physical reality. Finally, educators often say that learning can also occur beyond the classroom setting. In a rapidly changing world, instructors must utilize a variety of teaching and assessment strategies, and must encourage students to learn continually even long after graduation.

Proper study skills and habits are an important component of learning. Thomas (1992) indicates that students spend a minimum amount of time studying and doing schoolwork in the school setting. Their work is shallow,
repetitive, and unproductive when they study alone. Students show little of higher-order thinking skills that most educators believe necessary for mature information processing and problem solving. Students sometimes appear uninterested in planning and executing self-management activities. On the contrary, Thomas (1992) has also found that certain criteria can induce positive study practices that lead to mastery of course content and the kinds of integrative learning and problem-solving skills necessary to succeed in four-year colleges and in the workforce. Setting clear course and lesson objectives, as well as teaching students the techniques of studying are two important criteria.

Testing students on material covered by homework assignments and class work is also essential. Rather than supplying review sheets alone, instructors can test students' understanding of the subject by asking them direct questions or by giving them time to ask questions. The more individual students receive written or verbal comments from their instructors, the more inclined they are to develop study aids, specifically note-taking. The more thorough the feedback on quizzes and homework, the more likely students can manage their studying time effectively and to take the initiative for their own learning.

Carroll (1963) proposes that the degree of mastery is a function of the ratio of the amount of time students spend
on learning tasks to the total amount of time they need. Time actually spent on learning is defined as equal to the smallest of three variables: 1) opportunity (time allowed for learning); 2) perseverance (the amount of time students are willing to engage actively in learning); and 3) aptitude (the amount of time needed to learn under optimal instructional conditions) (Carroll 1963).

Effective Teaching Strategies

Good instructors should possess certain abilities. Such abilities include instructors' concern and respect for students, the nature and value of course material, the quality and frequency of feedback to students, the instructors' openness to opinions of others, along with their encouragement of questions and discussion (Centra and Bonesteel 1990). Lowman (1984) has proposed a two-dimensional model of effective college teaching. The first dimension is "intellectual excitement," including what is taught (clarity of communication) and how it is taught (public-speaking virtuosity). Skills necessary for clear communication include mastery and accuracy of content, the ability to analyze, integrate, apply, and evaluate information, and the ability to organize the subject matter. Public-speaking virtuosity includes the ability to use voice gestures and movement to stimulate emotions (Lowman 1984). Lowman (1983) calls the second dimension "interpersonal
rapport." This dimension encompasses the teacher's awareness of interpersonal phenomena and of the communication skills that increase students' motivation, enjoyment, and independent learning. According to Lowman's (1984) model, instructors with a high level of interpersonal rapport are extremely warm and open. Such instructors encourage students' questions and viewpoints, are sensitive to how students feel about the material, and encourage students to think critically and independently, rather than simply recall factual information.

Additionally, Findley (1995) believes that effective instructors in higher education are constantly evaluating their own teaching performance. Without a doubt, communication and listening are the keys to effective teaching. Developing the elements of effective teaching requires the reflective application of theory and practice surrounding education. Findley (1995) proposes eight effective teaching elements: 1) demonstrate subject knowledge and competence, 2) plan, organize, and prepare relevant teaching strategies and approaches, 3) relate to students as learners, 4) achieve a balance between student-centeredness and subject-content orientation, 5) influence student motivation for learning, 6) manage classroom issues and questions, 7) practice effective communication skills, and 8) use instructional support resources.

To further elaborate Findley's (1995) effective
teaching elements, effective instructors have a thorough and current understanding of and passion for their subject matter. Studies indicate that planning, organizing, preparing lesson plans, course syllabi, class objectives, as well as instructional aids and materials are important elements of effective teaching. Effective instructors act as mentors and counselors and know something about each student as an individual--student's expectations, academic needs, general motivation, or career goals (Findley 1995). Effective instructors are professionally prepared and organized, content task-oriented, and structured but flexible, while still relating to students in a warm and friendly way because they know something about each student and care about his or her learning process (Findley 1995). Effective instructors often use a sense of humor and help motivate their students by creating an encouraging and positive classroom culture that provides incentives for students to motivate themselves (Findley 1995). A primary skill of an instructor is to motivate students to learn and to long for knowledge. Effective instructors must also anticipate dealing with disruptive students, student problems, classroom questions, and other challenges (Findley 1995).

Instructors need to take on a new and more important role in teaching (Whittrock 1978). Instructors must learn to develop creative curriculum and instruction, and to rely
considerably less on ready-made materials such as textbooks, test banks, and instructional and laboratory manuals. Additionally, instructors must learn to become keen observers in the classroom, detecting how the various materials and instructional processes used affect student learning.

Johnson (1928) indicates that instructors must learn to experiment in their classrooms and to make instructional decisions based on objective evidence rather than on the basis of "conditioned emotional response." Gump (1967) suggests meaningful classroom units, such as classroom activity segments, are necessary if student learning is to be improved. Such units can "bind and organize" the details (Gump 1967). Without such units, learning activities are separated into "molecular bits" which make a comprehensive understanding difficult. Bennett (1976) recommends that formal teaching methods hold the key to student learning. Good and Grouws (1979) believe that increasing performance expectations and time utilization, along with improving student-teacher interactions are the keys to improved student learning. Nevertheless, Barr and Dreeben (1983) contend that increasing the content coverage or the pace of instruction is likely to enhance student learning.

Student Evaluations

According to Lorber and Pierce (1990), the main reason
instructors evaluate students is to determine the extent to which those students have achieved specific course objectives. Evaluation helps students identify areas of strengths and limitations, and provides students with a basis for comparing their abilities with fellow classmates. Evaluation also provides a basis upon which instructors can assess the effectiveness of particular instructional procedures and materials (Lorber and Pierce 1990). Furthermore, the data collected can be used to make important decisions about educational and vocational options.

Lorber and Pierce (1990) strongly believe that students need both verbal and written feedback from teachers in order to identify their strengths and limitations. The more feedback that is provided by instructors, the more students are able to correct their mistakes and achieve lesson/course objectives.

Lorber and Pierce (1990) recognize that grades on a report card do not truly reflect specific abilities of a student. If colleges and universities depend solely upon report cards, instructors need to explore the possibility of including with each report card a list of the instructional objectives for the class or course with indications of those which the students achieved.

Standardized and Nonstandardized Tests
All tests may be categorized as standardized or nonstandardized tests. Standardized tests, also known as norm-referenced tests, include a set of items that are administered and measured with uniform standards (Kosmoski 1997). These tests are often administered once or twice annually, and provide norms based upon very large (nationwide) population samples. Therefore, norm-referenced tests usually have excellent reliability and validity, and they allow the comparison of the scores of individual students with scores of other students in the school, community, state, and nation (Gage and Berliner 1992).

On the contrary, nonstandardized tests, also known as criteria-referenced tests, are most often used in the classroom as teacher-made tests. As the names imply, these are tests made by teachers (Kosmoski 1997). Criteria-referenced tests are regularly given before, during, and at the conclusion of instruction units. Criterion-referenced tests are designed to measure the students' ability with regard to a previously set criterion or specific body of knowledge or skill. Such tests are used to determine the students' level of achievement in a given domain of learning rather than how they compare to other students within the same school or in the nation (Kosmoski 1997). Criterion-referenced tests are used to measure mastery, focusing on which learning tasks the students can or cannot perform. Students are evaluated for mastery as determined by the
number of items answered correctly (Gronlund and Linn 2000). Instructors, in turn, may provide verbal or written instructional feedback to students for future improvement. Results aid instructors in assessing needs, determining strengths and limitations, and making future instructional plans. Traditionally, these tests provide scores that are translated into report card grades, and are not tested on large populations compared to the norm-reference tests (Kosmoski 1997).

Benefits and Drawbacks of Using Objective Tests

The objective tests include four major types of questions: true-false, matching, multiple-choice, and fill-in-the-blank. Lorber and Pierce (1990) state that objective tests are popular for at least three reasons. First, objective tests are intended to sample knowledge (subject matter) broadly, but not always deeply. Second, they are easy to score. Third, they lend themselves well to item analyses, so that instructors can continually improve items and develop a test bank of valid and reliable questions. Conversely, there are also disadvantages associated with objective tests, including emphasizing the memorization of bits and pieces of information, constructing items for objective tests is time-consuming, and confusing questions may appear to students when taking tests (Lorber and Pierce 1990). Meanwhile, important rules to use when constructing
objective tests include: 1) ask students to apply certain theories, rather than simply to recall factual information through regurgitation; 2) make sure that each item is independent; 3) do not establish a pattern for correct responses; 4) do not include abundant trick or trivial questions; and 5) do not give answers away after the test has started (Lorber and Pierce 1990).

There are advantages and disadvantages within each item of objective tests. True-false questions are easy to construct, but can be ambiguous and enables guessing. True-false questions are best utilized to measure recall and comprehension of facts (Murray 1995). Matching questions are popular with students and can be constructed to include a broad range of information. Yet, matching can be difficult to construct and enables students to answer by process of elimination. Matching is best used to measure comprehension by comparing and contrasting information (Murray 1995). Multiple-choice questions are easy to score and can be constructed to measure analysis and synthesis of information. However, multiple-choice questions may be difficult to construct and enable students to answer by process of elimination. Multiple-choice questions are most suitable for measuring comprehension and higher cognitive skills (Murray 19995). Fill-in-the-blank questions minimize guessing and can be more focused. Yet, fill-in-the-bank questions can be difficult to score when more than one
answer may be correct. Fill-in-the blank questions are ideal for measuring recall of facts and specific knowledge (Murray 1995).

There are three things that teachers should do to help students succeed on an objective test. Test questions should be understandable by test takers. Test items should also be arranged into specific blocks to reflect the major topics covered in class. A formal review session can be conducted a day or two before the test, perhaps with the test in hand (Lorber and Pierce 1990).

Benefits and Drawbacks of Using Essay Tests

Another popular evaluation method is an essay test. Essay tests may include short and extended writing questions. Essay questions can be effective for determining how well students can analyze, synthesize, evaluate, think logically, solve problems, and hypothesize (Ornstein 1995). They can also show how well students can organize thoughts, support a point, and create ideas, methods, and solutions (Ornstein 1995). Essay tests require students to synthesize a response, demonstrating not only their understanding of the relationships among bits and pieces of information, but also their understanding of the body of information as a whole (Lorber and Pierce 1990). The complexity of the essay questions and the complexity of thinking expected of the students can be adjusted to correspond to the students' age,
abilities, and experience (Ornstein 1995). These demands make essay tests useful in assessing higher-level cognitive skills such as critical thinking, idea integration, and theory application. Another advantage is the ease and short time involved in constructing essay questions.

Similar to objective tests, essay tests also have a number of disadvantages. Instructors fatigue, subconscious bias, and other extraneous variables may affect student grades. Essay tests are inherently biased in favor of those students who can write quickly, neatly, coherently, and think critically (Lorber and Pierce 1990). They are often low in reliability and validity since only a few questions are asked and a student may, by chance, be asked questions about which he or she happens to know a great deal or very little. Although essay tests take less time to prepare, they require a considerably longer period of time to read and evaluate answers (Lorber and Pierce 1990). The length and complexity of answers, as well as the standards for responding, can lead to reliability problems in scoring (Ornstein 1995).

Murray (1995) also believes that there are advantages and disadvantages within each item of essay tests. Short answer questions are easy to construct, adaptable to specific subject content, and minimize guessing but are difficult to score as more than one answer may be correct. Short answers are most suitable when measuring recall of
facts and specific knowledge (Murray 1995). Major advantages of extended essay questions include the fact that they are easy to construct and enable students to demonstrate a broad knowledge base. Yet, major disadvantages include time-consuming and ambiguous scoring, low test reliability, and limited coverage of subject content. Extended essays are best utilized in measuring higher cognitive skills, and application of specific theories and concepts (Murray 1995).

When designing an essay test, instructors should 1) be definitive about what is expected from the students; 2) describe the task clearly; 3) make sure that students have sufficient time and materials to complete the test; 4) grade papers anonymously; 5) compare each response with a model answer; and 6) when possible, use more than one evaluator and then average the grades (Lorber and Pierce 1990).

**Essay Versus Objective Tests**

Both essay and objective tests have strengths and limitations. Common test types include true-false, multiple choice, matching, fill-in-the-blank, short essay, and extended essay (Murray 1995). Mehrens and Lehmann (1991) identify five factors instructors and supervisors should consider when choosing between the essay and objective test: test purpose, time, number of students tested, facilities, and instructor’s skill.
If the purpose of the test is to measure critical thinking or written expression, instructors should select the essay test. However, if the purpose of the test is to measure knowledge of the subject or results of learning, instructors should choose objective tests (Mehrens and Lehmann 1991). Essay tests take little time to prepare, but require more time to score. The reverse is true for objective tests which take considerable time to construct but little time to score. Time constraints should be a consideration when selecting a test type (Mehrens and Lehmann 1991).

For practical reasons, essay tests are most often used when fewer students are tested. Objective tests are more practical when instructors need to test large groups (Mehrens and Lehmann 1991). Objective tests require typing and reproducing copies. If facilities are limited, instructors may prefer to select the essay test (Mehrens and Lehmann 1991).

For the instructor, test writing requires a skill and objective tests require constructing numerous items. Each type of objective test, such as true-false, matching, multiple-choice, and fill-in-the-blank require different skills in writing (Mehrens and Lehmann 1991). Instructors need to practice and become proficient in these test writing skills. Essay tests require instructors' skills not only in writing, but also in interpretation and impartial scoring.
Constructing Teacher-made Tests

Most tests administered in schools are criterion-referenced or teacher-made tests. Instructors are often expected to construct their own assessment instruments (Kosmos 1997). No one type of teacher-made test serves all purposes. Instructors must determine which type of test is most appropriate for differing contents, situations, and students (Kosmos 1997).

Ornstein (1995) explains that most teacher-made tests fall into two categories: the essay (free-response) test and the short-answer (objective) tests. Essay tests usually consist of a few questions that require lengthy answers. Objective tests consist of many questions, with each requiring little time to respond. Students must provide a specific and brief answer in objective tests (Ornstein 1995).

When constructing objective tests, instructors seek to find the most appropriate manner to pose questions or problems to students. Test items most often involve recall knowledge of facts, names, and items (Kosmoski 1997). Questions may be designed to require higher-order thinking abilities. The multiple-choice test is the easiest objective form to use when measuring cognitive skills (Kosmoski 1997). To successfully use objective tests,
instructors must possess these skills: knowledge of the content, the ability to translate pre-determined course or unit objectives into specific recall and higher-order test items, and the ability to construct items that distinguish between students who do and do not know the tested material (Kosmoski 1997).

To measure imaginative, subjective, and divergent thinking, instructors need more than objective tests. Tuckman (1991) claims that essay tests are the best form of classroom test to measure higher mental processes for all students in middle school through college. There are three types of essay questions based on item specificity and structure (Ornstein 1995). Type 1 essay questions may lead to extended responses by using the words "how," "why," and "what consequences," to demonstrate essential knowledge and concepts, integrate the subject matter, analyze information, make inferences, and show cause and effect relationship. Type 2 essay questions determine how well students can organize, select, and reject information from several sources. Examples of directive words include "examine," "explain," "discuss," or "infer" (Ornstein 1995). Type 3 essay questions require students to select and organize specific data. Frequently used words include "compare," "contrast," and "identify" (Ornstein 1988; Rosenshine and Meister 1992).

Lorber and Pierce (1990) conclude that teacher-made
essays and objective tests deserve some emphasis because instructors, better than anyone else, know what the instructional objectives are and what kind of questions need to be asked to determine whether the objectives have been achieved. Hence, instructors determine whether content validity of the evaluation exists. Since instructors know exactly what they have taught, they can meticulously construct tests for their respective students that will have a higher degree of content validity than virtually any standardized tests (Lorber and Pierce 1990). Well-constructed teacher-made tests, if tailored to precise needs, can clearly be a key tool to help improve the teaching-learning process.

Laboratory Teaching

Laboratory (lab) experience is an essential part of learning. It helps students comprehend concepts and develop skills to a degree that cannot be accomplished by lectures alone (Abraham et al. 1987). Instructors use various strategies for teaching in the lab. Many lab instructors go around the room and ask students' questions about the experiments. At the beginning of each lab, instructors often give a brief lecture regarding lab objectives, procedures, and experiments. Instructors generally check the results and data of students while they are performing the experiments (Abraham et al. 1987).
Many students take lab because they are required courses for graduation. These students are often less enthusiastic about learning and show less participation during lab activities. Lab instructors’ effect on students must be largely motivational. Lab instructors’ skill at information transfer would be increased by teaching experience, leadership ability, and subject matter exposure (Monts and Pickering 1981). Lab instructors may get students excited or worried about the practical exams. Lab practical exams are based on students’ ability to perform proper laboratory techniques (Monts and Pickering 1981).

Lab reports, quizzes, and practical exams are major contributors to the overall lab grade of students. Grades on lab reports are mainly based on consistency between data and conclusions (Abraham et al. 1987). In some community colleges, lab and lecture grades are kept separately. However, when the lab grade contributes to the overall course grade, it most often accounts for between 20 and 35% of that grade (Abraham et al. 1987). Lab quizzes or practical exams stress knowledge about concepts or principles as the most important goal of a lab program (Abraham et al. 1987). The knowledge gained in the lab may aid students in understanding particular areas of the lecture (Mazlo 2002).

Students managed their time based on what had a direct impact on their grades. If items are graded, students will
place them on a higher priority than something that is merely "recommended" for their benefits (Mazlo 2002). Students spend more time, energy, and effort into understanding the lab in advance if some kind of grade is attached. As a lab instructor, if weekly quizzes are given, then the emphasis is on preparation, and students are expected to be familiar with the information. Quizzes affect their grade directly, so students often take prelab preparation seriously (Mazlo 2002).

Cooperative Learning

In the cooperative learning approach, students work together in small groups to complete lab and research assignments. The cooperative learning approach is in contradiction with individualistic and competitive goal structures that have been the traditional modes of education for many decades (Smith and Hinckley 1991). Small groups normally consist of three to five students. Instructors sometimes select students into different groups or students may select their own group members. Students within each group should represent a range of ability from high to low achievers (Smith and Hinckley 1991). Students in each group decide how they would divide the preparatory assignment among their members.

The instructional aim is for students to be motivated toward helping one another achieve when their success
depends heavily on the group's success (Smith and Hinckley 1991). If a group member is not well-prepared, then the whole group is adversely affected. Students concern about grades being affected by underperforming members are addressed by using a peer-performance review (Berger 1999). Students could provide input about any group member who was underperforming, or could provide exceptional input, directly to the instructor. Students provide a behavioral description of the peer's input or lack of input and qualitative feedback about how this affects the group's performance (Berger 1999). This peer-evaluation process greatly reduces the complaint that some students get a free ride in group projects.

The cooperative learning approach involves in the division of labor, so that each student in a group is assigned a particular part of a topic and acts as a resource, helping the other group members to learn that section of the material (Smith and Hinckley 1991). Thus, the proper use of cooperative learning by instructors in lab and research assignments seems to have many positive effects on student achievement.

Performance Assessments

Performance assessments are types of demonstration by which students show their deep understanding of a particular area of learning (Kubiszyn and Borich 2000). Performance
assessments provide a basis for instructors to evaluate both the effectiveness of the process and the product resulting from performance of a task. Unlike simple tests of factual knowledge, there is rarely a single right or best answer (Linn and Gronlund 2000). Rather, there may be multiple performances and problem solutions that would be judged excellent.

All performance assessments require students to structure the assessment task, apply information, construct responses, and explain the process by which they arrive at the answer (Kane and Mitchelle 1996). Students' answers on performance assessments are rated using agreed upon rating criteria and standards, usually in the form of scoring rubrics, by a group of scorers, or by individual instructors. Rubric refers to a scoring guide used to evaluate the quality of students' constructed responses (Popham 2000).

In theory, performance process generates a wealth of information about students that can be used for instructional purposes. This information might shed some light on the students' understanding and involvement of the problem, along with the ability to express themselves (Kane and Mitchelle 1996). Performance assessments help students establish a meaningful context for learning, develop writing and conceptual skills, and therefore, achieve higher levels of desired outcomes (Kane and Mitchelle 1996). In short,
performance assessments attempt to help students take greater responsibility for their own learning.

Essay tests are the most common example of a performance-based assessment, but there are many others, including artistic productions, scientific experiments, oral presentations, and the use of mathematics to solve real-world problems (Linn and Gronlund 2000). The emphasis is on doing, not merely knowing; on process as well as product (Linn and Gronlund 2000). Many highly valued learning outcomes emphasize the actual performance of tasks in realistic settings. This is obvious in the case of art or music and for vocational or industrial education courses such as auto repair, woodworking, or typing. In each case, performance-based assessments are needed to measure some of the desired learning outcomes (Linn and Gronlund 2000).

Like essay questions, performance assessments should be used primarily to measure those learning outcomes that cannot be measured well by objective test items (Linn and Gronlund 2000). Objective test items are generally more efficient and more reliable for measuring factual knowledge and the ability to solve well-structure problems. However, performance assessments are better suited for applications with less structured problems where problem identification; collection, organization, integration, and evaluation of information; and originality are emphasized (Linn and Gronlund 2000). They are also essential for learning
outcomes that involve the creation of a product, or an oral or physical (hands-on) performance.

Today, performance assessments can be characterized as follows: Portfolios, research reports, research projects, demonstrations, and learning journals (Kanes and Mitchelle 1996). Portfolio consists of a collection of a student’s sample work and developmental products, which may include multiple drafts of an assignment. Portfolio assessment is a good way to show both final achievement and the effort put into getting there. Portfolios may include teacher’s observational notes, students’ own periodic self-evaluations, progress notes submitted by teacher and student as they collaboratively review the student’s growth, as well as sample of the student work selected by the instructor and student (Worthen, Borg, and White 1993).

Research reports and projects are usually undertaken by students on a specific topic and used to demonstrate their mastery of that topic within a course. All drafts of research work should be kept on file to demonstrate the complete development of research and writing process. Demonstrations may take the form of student presentations of research project work (Kane and Mitchelle 1996) when students share important findings of research results with the instructor and classmates. Moreover, keeping regular journals may help students describe relevant activities during the course of study. Included in this journal should
be activities that students have learned and questions that students would like to further explore regarding particular topics within a course.

The extended performance task, such as lengthy research reports and projects, may require students to seek information from a variety of sources beyond those provided by the task itself. For instance, students may need to use the library, make observations, collect and analyze data in an experiment, conduct a survey, or use a computer or other types of equipment (Linn and Gronlund 2000). The process or procedures that students use may be observed and be an important part of the assessment. Products that are generated may take a variety of forms, such as the construction and presentation of graphs or tables, the use of drawings or photographs, or the construction of physical models (Linn and Gronlund 2000). Instructors may allow students an opportunity for revisions or modifications. This freedom enables students to demonstrate their ability to select, organize, integrate, and evaluate information and ideas.

Benefits and Drawbacks of Using Performance Assessments

The are at least three great benefits for using performance assessments. First, performance assessments are intended to show teachers a rich array of what students can achieve and can measure skills that traditional written
tests cannot measure. They can clearly communicate instructional goals that involve complex performances in natural settings both in and outside of school. Sometimes written tests are called "snapshot" assessments and may not have practical values. Second, performance assessments can measure both process and product resulting from performing a task (Oosterhof 1994). Finally, performance assessments are a way to motivate students to higher levels of learning (Kubiszyn and Borich 2000), a major part of the active learning process for students.

However, performance assessments have a few significant limitations. First, they require an additional investment of time by already overextended instructors (Worthen, Borg, and White 1993). Instructors must be prepared for the required investment of time if they decide to closely follow the performance assessment path. Second, deciding how performance assessments should be scored or evaluated are a major flaw. Most teachers are so busy that they do not have additional time to create sophisticated scoring rubrics (Popham 2000). Teachers' subjective view could lead to unreliability, inconsistency, and inequality in scoring and evaluating student performance (Worthen, Borg, and White 1993). There is no universal scoring system for assessing performance-based learning. Students' constructed responses are genuinely difficult to evaluate when those responses vary considerably from student to student (Popham 2000).
Performance assessments are individually tailored and often do not compare with the work of other students in the class. Finally, performance assessments may not serve well as a means of providing information needed for educational accountability at the large-scale, such as the district, state, or national levels (Worthen, Borg, and White 1993).

Distance (Web-Based) Learning

The last decade has witnessed an unprecedented popularity of the use of the Web in all levels of education. In particular, the Web appears to be an ideal platform to support higher levels of learning and knowledge construction due to its hypertext environment that has unbounded access to diverse information resources (Kanuka 2002). Distance education delivered via the Internet is projected to be a primary delivery vehicle for many academic programs at the higher education level in the future (Phillips 1998).

Benefits of Distance Learning

An effective use of the Web may facilitate and maximize higher levels of distance learning. Online learning can train students in the technology that is providing the competitive advantage for global corporations and, at the same time, allow them to build international knowledge communities (Webster and Hacklery 1997). Web also provides an opportunity for interaction between instructors and
learners through online discussions, which may promote deep learning and critical thinking skills. Collaborative learning experiences can be a valuable experience in any college course. Through the use of virtual work teams and online forum discussions, students are able to develop vehicles for knowledge sharing and building international knowledge communities. A more personal dialogue between students and instructors can occur in online education. Students reported that electronic communication allowed them to participate more than a typical classroom setting. Hence, Web-based instruction has the potential to provide students with a rich learning experience while they gain expertise in cutting-edge computer technology (Berger 1999).

Drawbacks of Distance Learning

Instructor's attitude is related positively with student learning outcomes in technology-mediated distance learning (Webster and Hacklery 1997). Web-based instruction has some significant differences from the typical classroom experience. The distance learning format can present some new challenges to both instructors and students. A first experience with Web-based instruction can result in cognitive overload for an instructor (Alavi et al. 1997). In addition to redesigning a course for distance learning, instructors must become familiar with the technology and develop an information management system for the virtual...
classroom. Instructors must let students know how to contact them and what to expect in terms of turnaround time for communications (Berger 1999). Instructors often report information overload with a mass of students all wanting responses immediately (Berger 1999). Greater structure needs to be built into Web-based distance education courses in order to sustain the appropriate levels of control and quality. Facilitating interaction online is different from traditional learning transactions. A loss of instructor influence, greater difficulties in achieving higher-order learning, and group communication are some of the major negative effects of the online technology (Kanuka 2002).

Similarly, from a student's perspective, initial high levels of student anxiety were evident through abundant e-mail and voice-mail in the early stages of the course. Students expressed fear or apprehension about knowing their responsibilities or missing important announcements (Berger 1999). When submitting exams and assignments electronically, several common challenges can occur. First, students said they sent documents that were not received at the instructor's end. Second, students documents were received as attached files, but the instructor was unable to open files. Third, students sent e-mail from an e-mail address that was not their own, and thus, the author of the document could not be identified. Fourth, student sent exam answers for an objective exam in formats that were all
unique, making scoring of this exam quite challenging. Finally, students exams were saved by the name of the attached file, which ultimately resulted in a multitude of files named midterm.doc. (Berger 1999).

Although the Web is used extensively in distance education as a medium for communication and as an information dissemination platform, most were still predominately text-based (Kanuka 2002). Most often provided are course objectives, sequencing of the course content, and presentation of content covered in a textbook, followed by questions for discussion. When Web sites are developed in a text-based content dissemination format, it is difficult to argue the advantages of the use of the Web over other distance delivery platforms, such as paper (Kanuka 2002). More learners have access to postal services than Internet. Distance education courses are challenging and are temporarily removing learners from their comfort zones.

Summary

The literature in this chapter reviews the history and philosophy of issues leading up to various instructional and testing techniques by community college instructors nationwide.

Since adjunct instructors often teach at odd hours and off-campus sites, they are not highly involved in departmental and institutional activities, and have a
limited access to certain media compared to their full-time counterparts. Holding a master's degree is the standard for most community college instructors today. The D.A. and Ed.D. are teaching doctorates, primarily preparing students for future college teaching, and thus making fewer research demands than the Ph.D. Typical Ed.D. programs focus largely on instructional and curricular studies (professional education), while the D.A. programs combine a specific academic discipline with a college teaching internship and a dissertation in the theory and practice of college teaching. Effective instructors are the ones whose content presentation is extremely clear and exciting and whose interpersonal relationships with students are marked by warmth, openness, predictability, and student-centeredness. Effective instructors must motivate students to learn and must use a variety of teaching and assessment techniques in order to accommodate students with different backgrounds and learning styles.

Criterion-referenced tests are teacher-made tests most frequently used in classrooms. Rather than comparing scores with other students, criterion-referenced tests measure content mastery and provide scores that are translated into report card grades at the end of each semester. There are advantages and disadvantages of using objective and essay tests. There are also advantages and disadvantages within each item of objective tests. Selection of which type of
test should be made by using five factors: purpose, time, number of students tested, facilities, and teacher skills. Similarly, there are benefits and drawbacks of using performance assessments. In short, no single test type or performance-based evaluation is perfect and can serve all purposes. Hence, instructors must determine which type of evaluation is most appropriate for differing contents, situations, and students. Most instructors use a combination of written tests and performance assessments to accommodate students with different backgrounds and learning styles.
CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

Introduction

The purpose of this study was to investigate differences in faculty background and demographic information, instructional and assessment testing techniques, as well as overall course objectives associated with student competencies in two Nevada public community colleges. This chapter describes the research questions, research design, target population, data collection techniques, and statistical analyses of data used in the survey instrument.

Research Questions

This study examined: 1) the differences in teaching methods linked with the current faculty status and educational level, 2) the differences in assessment practices linked with faculty status and educational level, and 3) the differences in course objectives linked with faculty status and educational level. Specifically,

1) Was faculty status (full-time vs part-time) related to the array of instructional strategies they use?
2) Was faculty status related to the array of assessment strategies they implement?

3) Was faculty status associated with the array of course objectives they wanted students to obtain?

4) Was faculty educational level (doctorate vs nondoctorate) related to the array of instructional strategies they use?

5) Was faculty educational level related to the array of assessment strategies they implement?

6) Was faculty educational level associated with the array of course objectives they wanted students to obtain?

Design of Questionnaire

To facilitate this study, a survey instrument consisting of 18 questions was developed and disseminated to 400 randomly selected faculty members in CCSN and TMCC. Because there were considerably more faculty members employed at CCSN than at TMCC, a total of 270 and 130 surveys was sent to CCSN and TMCC, respectively. Responses from faculty members were absolutely essential in order to be logically representative. Of the two institutions, TMCC has an enrollment of over 11,000 students, and located in Reno and the vicinity of northern Nevada, while CCSN has an enrollment of over 33,000 students, and is located in the Las Vegas Valley and the vicinity of southern Nevada.
A pilot study was initially conducted by doctoral colleagues, members of The Cannon Center for Survey Research (CCSR) and Clark County School District (CCSD), as well as education faculty members at UNLV (Appendix I). The purpose of a pilot study was to test the appropriateness, meaningfulness, and usefulness of specific questions used on the survey before distribution to the actual survey group. A positive feedback of the pilot study greatly enhanced the validity of the survey instrument without involving members of the target population.

The final survey instrument had multiple parts, including 18 closed-ended questions, and was disseminated to faculty members of CCSN and TMCC. Part I contained 15 multiple choice and fill-in-the-blank questions (items 1 through 15) regarding the background and demographic information of community college faculty members.

Part II listed six common instructional techniques (item 16) implemented by instructors in their classes. These were responded to by using a 5-point Likert-like scale with estimated frequencies: 1 = < 10 %; 2 = 11-25 %; 3 = 26-50 %; 4 = 51-75 %; and 5 = > 75 %. In addition, a question of "Other (please specify)" was asked to include any unique teaching techniques.

Part III consisted of nine common assessment techniques (item 17) used by instructors, responding on a 5-point Likert-like scale with the same set of estimated frequencies.
shown above. Similarly, a question of "Other (please specify)" was asked to include any unique assessment formats.

Part IV, contained six questions (item 18) and described various types of course objectives associated with student competencies from an instructor’s perspective. A 4-point Likert-like scale was used with the following choices for answers: 1 = very unimportant, 2 = unimportant, 3 = somewhat important, and 4 = very important. Again, a question of "Other (please specify)" was also included to discover any unique course objectives.

Data Collection

Before the surveys were sent, names of faculty members and their respective departments were properly obtained from the Offices of Human Resources at CCSN and TMCC, along with a Human Subject Approval Letter (Appendix II). Multiple copies of a survey cover letter (Appendix III) and the survey instrument (Appendix V) were made by the Cannon Center for Survey Research (CCSR) located on the UNLV campus. The Cannon Center conducted sample surveys of the Nevada populations on selected topics in education, social and political sciences. A final survey instrument and a cover letter were disseminated to each of the 400 randomly selected faculty members of these institutions on January 23, 2003. Exactly four weeks following the initial survey
distribution, follow-up postcards (Appendix IV) were sent to the entire survey group because no attempt was made to identify the respondents. These postcards simply reiterated the purpose and significance of the survey, and briefly described the importance of high survey return rate in order to obtain the most accurate and reliable data.

The highest survey return rate undoubtedly occurred within the first three weeks of initial dissemination and then dropped off substantially. All responses were statistically analyzed and tabulated by March 14, 2003. As of March 14, the total number of surveys returned and entered into the database equalled 183. Of the 400 surveys sent, a total of 183 were received from both institutions representing an overall return rate of 45.8%. The return rate was considerably higher from CCSN (57.8%) than from TMCC (20.8%).

Statistical Analyses

Descriptive statistics were performed in the analysis of educational background and demographic data of responding faculty members. Mean values with standard errors were used in the analysis of faculty instructional techniques, assessment techniques, and course objectives linked with student competencies.

Because dependent variables were measured on an ordinal scale, nonparametric inferential statistics were employed.
Mann-Whitney $U$ Test (Analytical software 1994) was employed to detect significant differences in instructional and assessment techniques, along with linkages of course objectives to student competencies based on faculty status and educational level. Statistical significance was determined at $p \leq 0.05$.

However, statistical analyses were not conducted for the "Other, (please specify)" categories in this survey due to extremely low sample sizes when comparing with other measured variables.

Summary

This chapter presented a description of the research design and methodology to examine instructional and assessment techniques of instructors from CCSN and TMCC in Nevada. It addressed the research questions, design of questionnaire, data collection, and the statistical treatment of data. Results of the data analysis are presented in detail in Chapter Four.
CHAPTER 4

FINDINGS OF THE STUDY

Introduction

Using the Statistix (1994) software program, descriptive statistics, including frequency, percentage, and mean with standard error values, were computed for faculty demographic information. Nonparametric, inferential statistics were performed to detect significant differences in instructional techniques, assessment techniques, and course objectives associating with student competencies based on faculty status and educational level.

Faculty Demographic Analyses

Among the survey respondents, there was a higher proportion of adjunct instructors at CCSN (62.8%), while proportionally more full-time instructors (77.8%) were found at TMCC (Table 1). Over 80% of instructors did not have a doctoral degree regardless of their gender (Table 2) and place of employment (Table 1).

There were more adjunct instructors (over 56%) in both gender (Table 2). Substantially more full-time instructors had a doctoral degree, whereas more part-time instructors
Table 1. Name of Survey Respondents' Current Institution

Survey Question 1. What is the name of your current institution?

<table>
<thead>
<tr>
<th>Institution</th>
<th>Status</th>
<th>Educational level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Full-time</td>
<td>Part-time</td>
</tr>
<tr>
<td>CCSN</td>
<td>58 (37.2%)</td>
<td>98 (62.8%)</td>
</tr>
<tr>
<td>TMCC</td>
<td>21 (77.8%)</td>
<td>6 (22.2%)</td>
</tr>
</tbody>
</table>
Table 2. Gender of Respondents

Survey Question 3. What is your gender?

<table>
<thead>
<tr>
<th>Gender</th>
<th>Status</th>
<th>Educational level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Full-time</td>
<td>Part-time</td>
</tr>
<tr>
<td>Male</td>
<td>39 (42.9%)</td>
<td>52 (57.1%)</td>
</tr>
<tr>
<td>Female</td>
<td>40 (43.5%)</td>
<td>52 (56.5%)</td>
</tr>
</tbody>
</table>
had nondoctoral degree (Table 3).

Among the respondents, considerably more full-time instructors were pursuing a formal degree (68.4%) compared to part-time instructors (31.6%) (Table 4). Only one doctorate instructor and 17 nondoctorate instructors pursued a formal degree (Table 4).

There was an even split (50.0%) between full-time and part-time instructors who obtained a new academic degree in the past 12 months (Table 5). There were more full-time instructors who did not obtain a new degree in the past 12 month. One doctorate instructor and five nondoctorate instructors earned a new academic degree (Table 5).

Professional development and increased salary payment were the two main reasons for instructors to pursue an academic degree regardless of their status and educational level (Table 6).

Among the respondents, over two-thirds (67.1%) of part-time instructors taught courses during weekends and evening hours (Table 7). Substantially more nondoctorate instructors (90.3%) taught course during weekends and evening hours compared to their full-time counterpart (9.7%) (Table 7).

More adjunct instructors (64.1%) taught courses at off-campus sites than full-time instructors (35.9%) (Table 8). Similarly, considerably more nondoctorate instructors (88.2%) taught courses at off-campus sites than their
Table 3. Distribution of Highest Academic Degree

Survey Question 4. What is your current level of academic achievement?

<table>
<thead>
<tr>
<th>Academic degree</th>
<th>Full-time</th>
<th>Part-time</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; Bachelors</td>
<td>2 (100%)</td>
<td>0</td>
</tr>
<tr>
<td>Bachelors</td>
<td>6 (42.9%)</td>
<td>8 (57.1%)</td>
</tr>
<tr>
<td>Masters</td>
<td>43 (33.3%)</td>
<td>86 (66.7%)</td>
</tr>
<tr>
<td>Doctorate</td>
<td>29 (90.0%)</td>
<td>3 (10.0%)</td>
</tr>
<tr>
<td>Other</td>
<td>1 (50.0%)</td>
<td>1 (50.0%)</td>
</tr>
</tbody>
</table>
Table 4. Formal Degree

Survey Question 5. Are you currently pursuing a formal degree?

<table>
<thead>
<tr>
<th>Response</th>
<th>Status</th>
<th>Educational level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Full-time</td>
<td>Part-time</td>
</tr>
<tr>
<td>Yes</td>
<td>13 (68.4%)</td>
<td>6 (31.6%)</td>
</tr>
<tr>
<td>No</td>
<td>66 (40.5%)</td>
<td>97 (59.5%)</td>
</tr>
<tr>
<td>Response</td>
<td>Status</td>
<td>Educational level</td>
</tr>
<tr>
<td>----------</td>
<td>------------</td>
<td>-------------------</td>
</tr>
<tr>
<td></td>
<td>Full-time</td>
<td>Part-time</td>
</tr>
<tr>
<td>Yes</td>
<td>3 (50.0%)</td>
<td>3 (50.0%)</td>
</tr>
<tr>
<td>No</td>
<td>76 (43.2%)</td>
<td>100 (56.8%)</td>
</tr>
</tbody>
</table>

Survey Question 6. Have you earned any new degree in the past 12 months?
Table 6. Reason for Pursuing This Academic Degree

Survey Question 7. Why are you pursuing this academic degree?

<table>
<thead>
<tr>
<th>Reason</th>
<th>Status</th>
<th>Educational level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Full-time</td>
<td>Part-time</td>
</tr>
<tr>
<td>Salary</td>
<td>5 (71.4%)</td>
<td>2 (28.6%)</td>
</tr>
<tr>
<td>Prof. development</td>
<td>7 (58.3%)</td>
<td>5 (41.7%)</td>
</tr>
<tr>
<td>Teaching in diff. field</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
Table 7. Teaching Schedule

Survey Question 8. Do you teach during weekends and evening hours?

<table>
<thead>
<tr>
<th>Response</th>
<th>Status</th>
<th>Educational level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Full-time</td>
<td>Part-time</td>
</tr>
<tr>
<td>Yes</td>
<td>46 (32.9%)</td>
<td>94 (64.1%)</td>
</tr>
<tr>
<td>No</td>
<td>33 (82.5%)</td>
<td>7 (17.5%)</td>
</tr>
<tr>
<td></td>
<td>13 (9.7%)</td>
<td>17 (42.5%)</td>
</tr>
<tr>
<td></td>
<td>121 (90.3%)</td>
<td>23 (57.5%)</td>
</tr>
</tbody>
</table>
Table 8. Teaching Location

Survey Question 9. Do you teach at off-campus sites, such as high tech centers or by ways of distance education?

<table>
<thead>
<tr>
<th>Response</th>
<th>Status</th>
<th>Educational level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Full-time</td>
<td>Part-time</td>
</tr>
<tr>
<td>Yes</td>
<td>28 (35.9%)</td>
<td>50 (64.1%)</td>
</tr>
<tr>
<td>No</td>
<td>49 (49.5%)</td>
<td>50 (50.5%)</td>
</tr>
</tbody>
</table>
doctorate counterparts (11.8%) (Table 8).

In terms of subject areas, considerably more part-time instructors taught science, social science, humanities, business, and vocational courses than full-time instructors (Table 9). There was an even split (50.0%) between full-time and part-time instructors who taught Fine Arts courses. Science instructors had the highest number of doctoral degrees, followed by social sciences and English. As expected, vocational instructors did not have doctoral degrees. For nondoctorate instructors, science field was the highest, followed by English and social science fields (Table 9).

More part-time and nondoctorate instructors taught remedial (below 100-level) and 100-level courses than full-time and doctorate instructors who taught more 200-level courses (Table 10). Among the three course levels, many instructors taught at 100-level courses regardless of their status and educational level (Table 10).

On the average, more full-time instructors taught classes that had 21-30 students per class, whereas more part-time instructors taught classes that had 31-to 40 students per class (Table 11). No part-time instructors taught courses that had fewer than ten students per class. On the average, a class of 31-40 students was most common, followed by a class of 21-30 students for instructors irrespective of their educational level (Table 11).
Table 9. Teaching Subject Area(s)

Survey Question 10. Which major subject area(s) do you mainly teach?

<table>
<thead>
<tr>
<th>Subject</th>
<th>Full-time</th>
<th>Part-time</th>
<th>Doctorate</th>
<th>Nondoctorate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math</td>
<td>8 (53.3%)</td>
<td>7 (46.7%)</td>
<td>2 (14.3%)</td>
<td>12 (85.7%)</td>
</tr>
<tr>
<td>Science</td>
<td>11 (35.5%)</td>
<td>20 (64.5%)</td>
<td>9 (29.0%)</td>
<td>22 (71.0%)</td>
</tr>
<tr>
<td>Logic/Comp. Sci.</td>
<td>5 (71.4%)</td>
<td>2 (28.6%)</td>
<td>1 (14.3%)</td>
<td>6 (85.7%)</td>
</tr>
<tr>
<td>Social Science</td>
<td>8 (32.0%)</td>
<td>17 (68.0%)</td>
<td>5 (20.8%)</td>
<td>19 (79.2%)</td>
</tr>
<tr>
<td>English</td>
<td>14 (53.8%)</td>
<td>12 (46.2%)</td>
<td>4 (16.0%)</td>
<td>21 (84.0%)</td>
</tr>
<tr>
<td>Humanities</td>
<td>5 (22.7%)</td>
<td>17 (77.3%)</td>
<td>3 (15.8%)</td>
<td>16 (84.2%)</td>
</tr>
<tr>
<td>Fine Arts</td>
<td>4 (50.0%)</td>
<td>4 (50.0%)</td>
<td>1 (14.3%)</td>
<td>6 (85.7%)</td>
</tr>
<tr>
<td>Business</td>
<td>4 (28.6%)</td>
<td>10 (71.4%)</td>
<td>2 (14.3%)</td>
<td>12 (85.7%)</td>
</tr>
<tr>
<td>Vocational</td>
<td>7 (41.2%)</td>
<td>10 (58.8%)</td>
<td>0</td>
<td>16 (100.0%)</td>
</tr>
</tbody>
</table>
Table 10. Teaching Class Level

Question 11. What level of classes do you currently teach?

<table>
<thead>
<tr>
<th>Class level</th>
<th>Status</th>
<th>Educational level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Full-time</td>
<td>Part-time</td>
</tr>
<tr>
<td>Remedial</td>
<td>11 (44.0%)</td>
<td>14 (56.0%)</td>
</tr>
<tr>
<td>100’s</td>
<td>67 (39.9%)</td>
<td>101 (60.1%)</td>
</tr>
<tr>
<td>200’s</td>
<td>46 (92.0%)</td>
<td>4 (8.0%)</td>
</tr>
</tbody>
</table>
Table 11. Average Class Size

Survey Question 12. On the average, how many students do you teach per class?

<table>
<thead>
<tr>
<th>Number of students</th>
<th>Status</th>
<th>Educational level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Full-time</td>
<td>Part-time</td>
</tr>
<tr>
<td>Under 10</td>
<td>3 (100.0%)</td>
<td>0</td>
</tr>
<tr>
<td>11 - 20</td>
<td>15 (62.5%)</td>
<td>9 (37.5%)</td>
</tr>
<tr>
<td>21 - 30</td>
<td>30 (44.8%)</td>
<td>37 (55.2%)</td>
</tr>
<tr>
<td>31 - 40</td>
<td>20 (27.4%)</td>
<td>53 (72.6%)</td>
</tr>
<tr>
<td>41 - 50</td>
<td>9 (75.0%)</td>
<td>3 (25.0%)</td>
</tr>
<tr>
<td>Over 50</td>
<td>2 (100.0%)</td>
<td>0</td>
</tr>
</tbody>
</table>
Full-time instructors learned their teaching techniques through a teaching and learning center, seminars/workshops, educational programs, from former instructors, through personal experience, and from colleagues, in descending order of abundance (Table 12). However, none of the part-time instructors learned their teaching strategies through a teaching and learning center. There was an even split (50.0%) between full-time and part-time instructors who learned their techniques from colleagues. A large percentage of part-time instructors learned from colleagues and through personal experience (Table 12). In terms of educational level, both doctorate and nondoctorate instructors learned their teaching methods through personal experience, followed by from colleagues and through educational course/program (Table 12).

Similarly, full-time instructors learned their assessment techniques through a teaching and learning center, seminars/workshops, educational course/program, from former instructors, through personal experience, and from colleagues, in descending order of abundance (Table 13). Part-time instructors learned their assessment methods from colleagues, through personal experience, and from former instructors. However, none of the part-time instructors learned through a teaching and learning center. Both doctorate and nondoctorate instructors learned their assessment methods through personal experience, followed by
Table 12. Teaching Technique Sources

Survey Question 13. Where did you learn about teaching techniques?

<table>
<thead>
<tr>
<th>Teaching techniques</th>
<th>Status</th>
<th>Educational level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Full-time</td>
<td>Part-time</td>
</tr>
<tr>
<td>Teaching/learning center</td>
<td>9 (100.0%)</td>
<td>0</td>
</tr>
<tr>
<td>Personal experience</td>
<td>60 (51.7%)</td>
<td>56 (48.3%)</td>
</tr>
<tr>
<td>Colleagues</td>
<td>39 (50.0%)</td>
<td>39 (50.0%)</td>
</tr>
<tr>
<td>Edu. course/program</td>
<td>40 (85.1%)</td>
<td>7 (14.9%)</td>
</tr>
<tr>
<td>Seminar or workshops</td>
<td>36 (87.8%)</td>
<td>5 (12.2%)</td>
</tr>
<tr>
<td>Former instructors</td>
<td>35 (74.5%)</td>
<td>12 (25.5%)</td>
</tr>
</tbody>
</table>
Table 13. Assessment Technique Sources

Question 14. Where did you learn about assessment techniques?

<table>
<thead>
<tr>
<th>Assessment techniques</th>
<th>Status</th>
<th>Educational level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Full-time</td>
<td>Part-time</td>
</tr>
<tr>
<td>Teaching/learning center</td>
<td>5 (100.0%)</td>
<td>0</td>
</tr>
<tr>
<td>Personal experience</td>
<td>58 (54.7%)</td>
<td>48 (45.3%)</td>
</tr>
<tr>
<td>Colleagues</td>
<td>38 (51.4%)</td>
<td>36 (48.6%)</td>
</tr>
<tr>
<td>Edu: course/program</td>
<td>35 (83.3%)</td>
<td>7 (16.9%)</td>
</tr>
<tr>
<td>Seminars or workshops</td>
<td>29 (90.6%)</td>
<td>3 (9.4%)</td>
</tr>
<tr>
<td>Former instructors</td>
<td>29 (61.7%)</td>
<td>18 (38.3%)</td>
</tr>
</tbody>
</table>
from colleagues irrespective of their status (Table 13).

In terms of teaching experience, the largest percentage (97.5%) had 8-15 years, followed by over 15 years (84.6%) (Table 14). The largest percentage of part-time instructors had under three years (93.8%), followed by 3-7 years (89.3%) of teaching experience (Table 14). All but one doctorate instructors had at least eight years of teaching experience, whereas approximately 67% (95 out of 142) nondoctorate instructors had seven years or less in teaching experience (Table 14).

Research Question Responses

As stated previously, the objective of this study was to discover variations in instructional and assessment practices, along with course objectives associated with student competencies from instructors' perspectives in CCSN and TMCC.

Research Question 1

Was faculty status related to the array of instructional strategies they use?

Adjunct instructors focused significantly more \((p < 0.0001; \text{Table 15})\) on lectures than their full-time colleagues. Full-time instructors, however, placed significantly more \((p < 0.001; \text{Table 15})\) emphasis on class discussion/participation, slide/powerpoint presentation, lab
Table 14. Teaching Experience

Survey Question 15. Overall years of teaching experience.

<table>
<thead>
<tr>
<th>Years</th>
<th>Status</th>
<th>Educational level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Full-time</td>
<td>Part-time</td>
</tr>
<tr>
<td>Under 3</td>
<td>3 (6.3%)</td>
<td>45 (93.8%)</td>
</tr>
<tr>
<td>3 - 7</td>
<td>6 (10.7%)</td>
<td>50 (89.3%)</td>
</tr>
<tr>
<td>7 - 15</td>
<td>33 (97.1%)</td>
<td>1 (2.9%)</td>
</tr>
<tr>
<td>Over 15</td>
<td>33 (84.6%)</td>
<td>6 (15.4%)</td>
</tr>
</tbody>
</table>
**Table 15. Instructional Techniques Based on Faculty Status**

Survey Question 16. Thinking of one of your typical classes, what percentage of your time do you spend on each of the techniques listed below?

<table>
<thead>
<tr>
<th>Teaching Methods</th>
<th>n</th>
<th>Status</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Full-time</td>
<td>Part-time</td>
</tr>
<tr>
<td>Lectures</td>
<td>182</td>
<td>2.95±0.12</td>
<td>4.26±0.09</td>
</tr>
<tr>
<td>Discussion/participation</td>
<td>179</td>
<td>2.37±0.11</td>
<td>1.36±0.06</td>
</tr>
<tr>
<td>Lab teaching</td>
<td>174</td>
<td>2.23±0.20</td>
<td>1.26±0.05</td>
</tr>
<tr>
<td>Videos or comp. simulations</td>
<td>158</td>
<td>1.53±0.11</td>
<td>1.29±0.05</td>
</tr>
<tr>
<td>Slide/Powerpoint presentation</td>
<td>147</td>
<td>1.96±0.18</td>
<td>1.14±0.05</td>
</tr>
<tr>
<td>Distance Learning</td>
<td>134</td>
<td>1.67±0.18</td>
<td>1.00±0.02</td>
</tr>
</tbody>
</table>
teaching, and distance learning compared to part-time instructors (Table 15). Significant difference was not found between full-time and part-time instructors for videos/computer simulations ($p > 0.05$; Table 15).

Research Question 2

Was faculty status related to the array of assessment strategies they implement?

Full-time instructors emphasized on attendance/participation, quizzes, lab practicals, and research assignments significantly more, while they focused on multiple-choice exams ($p \leq 0.05$; Table 16) significantly less. No significant differences were observed between full-time and adjunct instructors for essay exams, workbook, and portfolios ($p > 0.05$; Table 16).

Research Question 3

Was faculty status associated with the array of course objectives they wanted students to obtain?

Adjunct instructors placed significantly more emphasis on recall of factual information, critical thinking, integration of ideas/concepts, and application of theories compared to their full-time colleagues ($p \leq 0.001$; Table 17). Conversely, understanding material and mastery of skills/concepts as course objectives between full-time and adjunct instructors were not statistically significant.
Table 16. Assessment Techniques Based on Faculty Status

Survey Question 17. On average, what percentage of your grade do you based on each of the techniques listed below?

<table>
<thead>
<tr>
<th>Assessment methods</th>
<th>n</th>
<th>Status</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Full-time</td>
<td>Part-time</td>
</tr>
<tr>
<td>Attendance/Participation</td>
<td>168</td>
<td>1.49±0.10</td>
<td>1.10±0.03</td>
</tr>
<tr>
<td>Quizzes</td>
<td>165</td>
<td>2.10±0.12</td>
<td>1.70±0.06</td>
</tr>
<tr>
<td>Multiple-choice exams</td>
<td>152</td>
<td>2.77±0.18</td>
<td>3.43±0.09</td>
</tr>
<tr>
<td>Essay exams</td>
<td>157</td>
<td>2.36±0.16</td>
<td>2.27±0.08</td>
</tr>
<tr>
<td>Lab practicals</td>
<td>141</td>
<td>2.24±0.22</td>
<td>1.10±0.03</td>
</tr>
<tr>
<td>Workbook</td>
<td>133</td>
<td>1.31±0.13</td>
<td>1.08±0.03</td>
</tr>
<tr>
<td>Oral presentations</td>
<td>146</td>
<td>1.28±0.09</td>
<td>1.07±0.04</td>
</tr>
<tr>
<td>Research assignments</td>
<td>131</td>
<td>1.90±0.13</td>
<td>1.12±0.04</td>
</tr>
<tr>
<td>Portfolios</td>
<td>131</td>
<td>1.29±0.17</td>
<td>1.03±0.02</td>
</tr>
</tbody>
</table>
Table 17. Course Objectives Based on Faculty Status

Survey Question 18. How important are each of the strategies listed below in attaining your course objectives?

<table>
<thead>
<tr>
<th>Course objectives</th>
<th>n</th>
<th>Status</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Full-time</td>
<td>Part-time</td>
</tr>
<tr>
<td>Mastery of skills/concepts</td>
<td>182</td>
<td>3.62±0.10</td>
<td>3.89±0.04</td>
</tr>
<tr>
<td>Recall of factual info.</td>
<td>181</td>
<td>2.82±0.12</td>
<td>3.60±0.05</td>
</tr>
<tr>
<td>Understanding material</td>
<td>182</td>
<td>3.54±0.10</td>
<td>3.87±0.04</td>
</tr>
<tr>
<td>Critical thinking</td>
<td>177</td>
<td>3.38±0.10</td>
<td>3.88±0.03</td>
</tr>
<tr>
<td>Ability to integrate ideas</td>
<td>182</td>
<td>3.37±0.11</td>
<td>3.92±0.04</td>
</tr>
<tr>
<td>Application of theories</td>
<td>181</td>
<td>3.01±0.11</td>
<td>3.86±0.04</td>
</tr>
</tbody>
</table>
Research Question 4

Was faculty educational level related to the array of instructional strategies they use?

Instructors with a doctoral degree focused significantly more on class discussion/participation and distance learning, while focusing significantly less on lectures than instructors with a nondoctoral degree ($p < 0.05$; Table 18). Differences in lab teaching, as well as the use of videos/computer simulations and slide/powerpoint presentations between doctorate and nondoctorate instructors were not statistically significant ($p > 0.05$; Table 18).

Research Question 5

Was faculty educational level related to the array of assessment strategies they implement?

Doctorate instructors placed significantly more emphasis ($p = 0.0345$; Table 19) on lab practicals than their nondoctorate counterparts. However, all other measured variables in assessment practices were not statistically significant with respect to faculty educational level ($p > 0.05$; Table 19). These variables included attendance/participation, quizzes, multiple-choice exams, workbook, portfolios, oral presentations, and research assignments.
Table 18. Instructional techniques Based on Faculty Educational Level

Survey Question 16. Thinking of one of your typical classes, what percentage of your time do you spend on each of the techniques listed below?

<table>
<thead>
<tr>
<th>Teaching Methods</th>
<th>n</th>
<th>Educational level</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Doctorate</td>
<td>Nondoctorate</td>
</tr>
<tr>
<td>Lectures</td>
<td>174</td>
<td>3.20±0.21</td>
<td>3.80±0.10</td>
</tr>
<tr>
<td>Discussion/participation</td>
<td>171</td>
<td>2.34±0.17</td>
<td>1.67±0.07</td>
</tr>
<tr>
<td>Lab teaching</td>
<td>124</td>
<td>1.71±0.21</td>
<td>1.56±0.09</td>
</tr>
<tr>
<td>Videos or comp. simulations</td>
<td>148</td>
<td>1.45±0.16</td>
<td>1.30±0.04</td>
</tr>
<tr>
<td>Slide/Powerpoint presentat.</td>
<td>138</td>
<td>1.57±0.23</td>
<td>1.35±0.07</td>
</tr>
<tr>
<td>Distance Learning</td>
<td>125</td>
<td>1.73±0.27</td>
<td>1.06±0.03</td>
</tr>
</tbody>
</table>
Table 19. Assessment Techniques Based on Faculty Educational Level

Survey Question 17. On average, what percentage of your grade do you based on each of the techniques listed below?

<table>
<thead>
<tr>
<th>Assessment methods</th>
<th>n</th>
<th>Educational level</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Doctorate</td>
<td>Nondoctorate</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>-----</td>
<td>-------------------</td>
<td>------------</td>
</tr>
<tr>
<td>Attendance/Participation</td>
<td>160</td>
<td>1.58±0.19</td>
<td>1.19±0.04</td>
</tr>
<tr>
<td>Quizzes</td>
<td>157</td>
<td>2.20±0.21</td>
<td>1.79±0.07</td>
</tr>
<tr>
<td>Multiple-choice exams</td>
<td>144</td>
<td>3.00±0.28</td>
<td>3.25±0.10</td>
</tr>
<tr>
<td>Essay exams</td>
<td>149</td>
<td>2.18±0.23</td>
<td>2.32±0.08</td>
</tr>
<tr>
<td>Lab practicals</td>
<td>130</td>
<td>2.15±0.41</td>
<td>1.35±0.08</td>
</tr>
<tr>
<td>Workbook</td>
<td>127</td>
<td>1.17±0.11</td>
<td>1.13±0.05</td>
</tr>
<tr>
<td>Oral presentations</td>
<td>138</td>
<td>1.47±0.22</td>
<td>1.11±0.04</td>
</tr>
<tr>
<td>Research assignments</td>
<td>145</td>
<td>1.75±0.24</td>
<td>1.32±0.06</td>
</tr>
<tr>
<td>Portfolios</td>
<td>125</td>
<td>1.00±0.00</td>
<td>1.12±0.05</td>
</tr>
</tbody>
</table>
Research Question 6

Was faculty educational level associated with the array of course objectives they wanted students to obtain?

No significant differences were found (p > 0.05) on course objectives between instructors with a doctoral degree and instructors with a nondoctoral degree (Table 20), indicating that faculty members shared similar course objectives associated with student competencies irrespective of their educational level. These course objectives included mastery of skills/concepts, recalls of factual information, understanding material, critical thinking, integration of ideas/concepts, and application of theories.
Table 20. Course objectives Based on Faculty Educational Level

Survey Question 18. How important are each of the strategies listed below in attaining your course objectives?

<table>
<thead>
<tr>
<th>Course objectives</th>
<th>n</th>
<th>Educational level</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Doctorate</td>
<td>Nondoctorate</td>
</tr>
<tr>
<td>Mastery of skills/concepts</td>
<td>175</td>
<td>3.70±0.12</td>
<td>3.78±0.06</td>
</tr>
<tr>
<td>Recall of factual information</td>
<td>177</td>
<td>3.00±0.15</td>
<td>3.26±0.07</td>
</tr>
<tr>
<td>Understanding material</td>
<td>174</td>
<td>3.62±0.14</td>
<td>3.72±0.06</td>
</tr>
<tr>
<td>Critical thinking</td>
<td>175</td>
<td>3.50±0.12</td>
<td>3.68±0.06</td>
</tr>
<tr>
<td>Ability to integrate ideas</td>
<td>164</td>
<td>3.53±0.13</td>
<td>3.69±0.06</td>
</tr>
<tr>
<td>Application of theories</td>
<td>175</td>
<td>3.37±0.14</td>
<td>3.50±0.07</td>
</tr>
</tbody>
</table>
SUMMARY/CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

Introduction

This study was designed to gather basic information with regard to key differences in general demographics of instructors, their instructional and assessment techniques, and course objectives with student competencies of two community colleges in Nevada (CCSN and TMCC). This survey study revealed differences in instructional techniques, assessment techniques, and course objectives in relation to faculty status and educational level.

Summary/Conclusions

Faculty Demographic Information

Over 80% of instructors did not have a doctoral degree regardless of their gender and place of employment. Substantially more full-time instructors had doctoral degrees, whereas more adjunct instructors did not. Adjunct instructors taught more courses during weekends and evening hours, and offered more courses at off-campus sites than their full-time colleagues. Adjunct instructors often offer up-to-date knowledge and skills in specific academic and
occupational areas, and exhibited a willingness to teaching off-site classes and classes held at non-traditional hours (Lankard 1994).

Professional development and increased salary payment were the two main reasons for instructors to pursue an academic degree regardless of their status and educational level. Bowles (1981) states that increased pay and prestige are two primary reasons for two-year college faculty's attainment of the doctorate as part of their professional development. In this study, the largest percentage of full-time instructors had 8-15 years, while the largest percentage of part-time instructors had under three years of teaching experience. Adjunct instructors appear to have a fewer years of teaching experience than their full-time colleagues (Cohen and Brawer 1977).

**Research Question 1**

Was faculty status related to the array of instructional strategies they use?

Adjunct instructors focused significantly more on lectures than their full-time counterparts. Full-time instructors, however, placed a significantly more emphasis on class discussion/participation, slide/powerpoint presentation, lab teaching, and distance learning compared to adjunct instructors. In general, access to computer and technology services, as well as lab equipment is
considerably easier for full-time faculty since adjunct instructors must often make a special trip to campus to preview software and may not arrive on campus early enough before a class to fetch needed materials from the media center (Bowles 1982). Many of the adjunct instructors also teach during the weekends and evening hours when audiovisual personnel have left campus. If a problem arises with a piece of equipment, adjunct instructors may not be able to find anyone to assist them. It takes only a few discouraging incidents to deter the use of media altogether. Other studies have also reported limited faculty support services from media center for adjunct faculty members (Hoenninger and Black 1978; Cottingham et al. 1981).

Research Question 2

Was faculty status related to the array of assessment strategies they implement?

Full-time instructors placed significantly more emphasis on attendance/participation, quizzes, lab practicals, and research assignments, while placing significantly less emphasis on multiple-choice exams. The frequent use of objective tests by adjunct instructors as an evaluation technique suggests that the relatively low-level cognitive function of recall of specific facts (Bowles 1981). Adjunct instructors may use multiple choice tests more often because these tests are easy to score, can
measure a broad scope of knowledge, and are often used in classes with high enrollment (Linn and Gronlund 2000). Such type of test is common in freshman and sophomore-level courses.

Despite a limited access to certain media, research studies have shown that adjunct faculty do not require less work from students than do their full-time colleagues and that the instruction provided by adjunct faculty is not always inferior to that provided by full-time faculty (Cottingham et al. 1981).

**Research Question 3**

Was faculty status associated with course objectives that they wanted students to obtain?

Adjunct instructors stressed significantly more on recall of facts, critical thinking, integration of ideas, and application of theories compared to their full-time counterparts. Adjunct instructors often offer the most current knowledge and skills with recall of factual information, followed by integration of ideas/concepts and application of theories in specific occupational areas (Lankard 1994).

**Research Question 4**

Was faculty educational level related to the array of instructional strategies they use?
Instructors with a doctoral degree focused significantly more on class discussion/participation and distance learning, while focused significantly less on lectures than instructors with a nondoctoral degree. This survey was in agreement with Bowles's (1982) study, indicating that instructors with a master degree lecture more extensively than instructor with a doctoral degree. Lecture, by far, was the most common mode of instruction, and was emphasized most significantly by community college instructors. Class discussion was the second most common method of instruction after lecture even though it was far below lecture in popularity (Bowles 1981 and 1982). This study is in agreement with Bowles' studies, concluding that lecture remains the most popular mode of instruction, followed by class discussion.

Differences in lab teaching, as well as the use of videos/computer simulations and slide/powerpoint presentations were not statistically significant, indicating that instructors spent a similar amount of time using these three types of instructional strategies irrespective of their educational level. Lab teaching (hands-on experience) was very common especially in science, applied science, and vocational courses in this study. However, despite the advent of web-based instruction in the 1990s, distance learning was still least frequently used by many instructors compared to other types of instructional practices.
Research Question 5

Was faculty educational level related to the array of assessment strategies they implement?

Doctorate instructors placed significantly more emphasis on lab practical than their nondoctorate counterparts. However, all other measured variables in assessment practices were not statistically significant with respect to faculty educational level, indicating that instructors assess student achievement or performance in class in a similar way. These variables included attendance/participation, quizzes, multiple-choice exams, workbook, portfolios, oral presentations, and research assignments.

Attendance/participation, workbook, oral presentations, research assignments, lab practicals, and portfolios were least emphasized by instructors. Performance-based assessments still remain unpopular according to the survey respondents in CCSN and TMCC. The type of academic degree held by community faculty members does not seem to be correlated with the percentage of time that they spend using films and taped media (Bowles 1981).

Research Question 6

Was faculty educational level associated with course objectives that they wanted students to obtain?

In this study, significant differences were not
observed on the six types of course objectives between instructors with a doctoral degree and instructors without a doctoral degree. Previous studies have shown that among community college faculty, possession of the doctorate does not seem to affect the overall course objectives, level of teaching satisfaction with course materials, and attitudes toward course exams (Bowles 1981). Doctorate and nondoctorate English faculty nationwide appear to be quite similar in instructional practices (Wolfe and Kidd 1972). Perhaps community faculty members realize that many students are officially selecting an occupational curriculum as their terminal academic degree, or are enrolling in classes simply to satisfy the general education courses as part of their graduation requirements at 2-year institutions.

Overall, instructors focused most significantly on mastery of skills/concepts and understanding course material. Critical thinking and integration of ideas and concepts were also essential in this study. Application of theories in attaining course objectives was less emphasized. Recall of factual information was focused the least by CCSN and TMCC instructors.

Implications

Additionally, there is no single best instructional and testing technique, and course objective. In a rapidly changing world and in a highly competitive contemporary
society, instructors must attempt to use various instructional and assessment techniques, as well as course objectives with competencies that teachers want students to obtain. Instructors must learn how to adapt to societal changes as the time progresses. Learning occurs in many ways and environments, and instructors should fully support the learning process in every way possible. Although some instructors refuse to change in any way, one must realize that a complete resistant to change is futile, and they will be left behind in the highly competitive, contemporary society. What worked then may not work now or in the future. Instructors need to accommodate students with different backgrounds and learning abilities, and must learn new teaching and assessment techniques, including online instruction and using updated educational software programs, as technology continues to advance. Students, in turn, can learn the skills and knowledge necessary in order to compete successfully at the completion of their formal education. As instructors, we cannot afford to live in our past; it is a painful lesson we are still learning.

Recommendations Based on This Study

There are three recommendations based on the results of this study. First, a formal system of faculty instructional support is in place at CCSN and TMCC. Faculty instructional support regularly offers a series of workshops that exhibit
teaching and technology enhancement, as well as creating teaching web sites through WebCT. This study revealed that adjunct instructors did not learn their teaching and assessment strategies from the faculty instructional support. More faculty members, especially adjunct instructors, should take an advantage of this instruction-related program.

Second, this study showed that since Bowles' studies in 1981 and 1982, adjunct instructors still used lecture more often than their full-time colleagues. Despite the criticisms of using excessive lecture, it still remains the backbone of community college instruction (Bowles 1981 and 1982). Although the popularity of powerpoint presentation and distance learning continues to increase, many CCSN and TMCC instructors still utilize limited computer technology. As technology continues to advance, instructors should consider using more computers, Internet, and updated educational software programs as part of their teaching tools.

Finally, in this study, adjunct instructors taught more courses during non-traditional hours. This finding is consistent with the results published in Bowles' studies (1981 and 1982). Since audiovisual personnel are often unavailable during weekends and evening hours, the multimedia equipment is often unaccessible to adjunct instructors. This appears to be one additional obstacle to
adjunct instructors' effort to diversify teaching and assessment techniques. Such diversification would accommodate students with different backgrounds and learning styles; and to maximize student learning.

Recommendations for Further Research

This study is intriguing, and there are several areas in which future research efforts could expand beyond the present findings. First, survey participants should be at the national level with community college instructors from rural, urban, and suburban settings, not strictly restricted to Nevada. Second, the inclusion of the specific research time frame is essential. A long-term study (a number of years) would be more appropriate, representative, and conclusive. Third, sample sizes should be large enough and evenly distributed among treatments (faculty status and educational level) and among educational institutions. In this study, relatively small sample sizes would not be completely representative and meaningful. Fourth, the survey instrument itself should contain some open-ended questions in order to provide more exact and valuable feedback regarding specific instructional and assessment techniques, along with overall course objectives with student competencies. Finally, personal interviews and classroom observations of randomly selected instructors at
the national level are also essential.

This study would be of great interest to instructors at many academic levels, ranging from elementary to graduate/professional schools. The new and improved survey instrument can discover if large variations exist among academic levels, individual states, geographical areas, as well as between public and private institutions. This survey instrument could also be utilized to compare various academic departments within an institution, and to compare the same departments of different institutions of the same academic level. Thus, it would be intriguing to discover similarities and differences in instructional and assessment techniques among institutions nationwide, and then to determine which styles of instruction and assessment have played a vital role in determining the academic success of students.

Despite similarities in overall course aims, objectives, and contents, instructors with different status and educational levels may use different instructional and assessment approaches. The data collection through a national survey would be logically representative, and the use of appropriate statistical analyses is valid to detect significant differences in teaching and assessment practices among rural, urban, and suburban settings.

This study could also include the process and product of student learning. Process variables deal with the
interaction of instructors and students, while product variables deal with quantitative measurements of student learning. Both process and product variables would discover the effectiveness of teaching, and would add a dimension of infinite worth to instructors at any academic level. A detailed study of instructional activities, student achievements, and the interaction of instructors and students among institutions would also provide insights regarding the effectiveness and ineffectiveness of certain teaching and assessment techniques. If a proper survey instrument is developed and if a proper comprehensive research study is conducted, the results and conclusions are likely to have more practical values for many community college instructors nationwide than the present study.

In summary, as community college education becomes more relevant to the real world of work, instructional and assessment techniques, along with student competencies, are becoming increasingly important so educators can actually relate their instructional material to the workplace. With the percentage of unskilled jobs decreasing and the percentage of skilled employment opportunities increasing, community college instructors are held accountable for student learning, and student competencies are becoming vital to the future workforce. In a rapidly changing, contemporary society, students can be well-prepared and can compete successfully in the workforce when instructors
demonstrate comprehensive knowledge of the subject, know how to integrate various ideas/concepts, and know how to apply theories and concepts to reality.
APPENDIX I

VALIDATING GROUPS

Validating Group #1

The first validating group asked to conduct an initial pilot study was comprised of members of the Clark County School District (CCSD), Cannon Center for Survey Research (CCSR), faculty of Educational Psychology Department, and doctoral cohort of Education Administration in Higher Education at the University of Nevada, Las Vegas (UNLV):

David DiRamio, Doctoral Cohort
Kimberly Dunn, CCSD and Doctoral Cohort
Lisa Edler, CCSD and Doctoral Cohort
Pam Gallion, Manager, CCSR
Dr. Thomas Lamatsch, Director, CCSR
Sandra Lord, Doctoral Cohort
Dr. Peggy Perkins, Educational Psychology
Robin West, CCSD

Validating Group #2

The second validating group was comprised of my doctoral examination committee members at UNLV:

Dr. Paul Meacham, Educational Leadership
Dr. Dale Andersen, Educational Leadership
Dr. Clifford McClain, Educational Leadership
Dr. Rodney Metcalf, Geoscience
Notice of Approval to Conduct Research Involving Human Subjects

DATE: October 18, 2002

TO: Simon Lei
   Dr. Paul Meacham (Advisor)
   M/S 3002

FROM: Dr. Fred Preston, Chair
   UNLV Social Behavioral Sciences Institutional Review Board


OPRS# 303S1002-492

This memorandum is official notification that the protocol for the project referenced above has been reviewed by the Office for the Protection of Research Subjects (OPRS) and has been determined as having met the criteria for exemption from full review by the UNLV Social Behavioral Sciences Institutional Review Board (IRB) as indicated in regulatory statutes 45CFR 46.101. The protocol has been submitted through the expedited review process and has been approved for a period of one year from the date of this notification. Work on the project may proceed.

Should the use of human subjects described in this protocol continue beyond August 14, 2003, it will be necessary to request an extension. Should there be ANY changes to the protocol, it will be necessary to submit those changes to the Office for the Protection of Research Subjects.

If you have questions or require any assistance, please contact the Office for the Protection of Research Subjects at 895-2794.

Cc: OPRS File
APPENDIX III

SURVEY COVER LETTER

January 23, 2003

Dear Colleague:

I am currently an adjunct educational psychology instructor at the University of Nevada, Las Vegas (UNLV) and college study skills instructor at the Community College of Southern Nevada (CCSN). I am also a doctoral (Ph.D.) student in the Department of Educational Leadership at UNLV. The survey enclosed regarding research in teaching techniques and course objectives is an essential part of my doctoral dissertation. I would like to include your responses in my results.

Your participation in the survey is voluntary, and please be assured that all of your answers will be kept strictly confidential and entered into a database without recording your name or the numerical code found on the survey. The code is for mailing purposes only. Once your survey is returned, your responses are not linked to you, and the results will only be reported in the aggregate.

Please take approximately 10 minutes out of your busy schedule to complete the survey and return it in the enclosed envelope.

If you want any additional information, you may contact me at (702) 255-1732 or send me an e-mail message at salei@unolcom. Thank you in advance for your time and participation.

Sincerely,

Simon Lei
UNLV Educational Psychology Instructor
CCSN College Study Skills Instructor
APPENDIX IV

REMINDER POSTCARD

February 21, 2003

Dear Colleague:

Recently, I sent you a survey about teaching techniques and course objectives. If you recall, I am a doctoral student in the Department of Educational Leadership at UNLV. The information collected in this survey is an essential part of my dissertation. If you have already completed the survey and returned it to me, please accept my sincere appreciation. If not, please do so today. Your thoughts and opinions are important to this survey.

If by some chance you did not receive the questionnaire or it got misplaced, please call the Cannon Center for Survey Research at (702) 895-0168 or send an e-mail message (pgallion@ccmail.nevada.edu) and another survey will be promptly sent to you.

Sincerely,

Simon Lei
UNLV Educational Psychology Instructor
CCSN College Study Skills Instructor

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APPENDIX V

SURVEY INSTRUMENT

SURVEY ON INSTRUCTIONAL AND ASSESSMENT TECHNIQUES, AND COURSE OBJECTIVES

I. Background and Demographic Information (Circle your responses)

1) What is the name of your current institution?
   a) CCSN
   b) TMCC

2) What is your current faculty status?
   a) full-time instructor
   b) part-time instructor

3) What is your gender?
   a) Male
   b) Female

4) What is your current level of academic achievement?
   a) Less than Bachelors
   b) Bachelors
   c) Master
   d) Doctorate
   e) Other

5) Are you currently pursuing a formal advanced degree?
   a) Yes
   b) No

6) Have you earned any new academic degree in the past 12 month?
   a) Yes
   b) No

7) If responding "Yes," why are you pursuing this academic degree?
   a) To increase salary
   b) For professional development in current field
   c) To teach in a different academic field
   d) Other ____________________

8) Do you teach during weekends and/or evenings hours?
   a) Yes
   b) No
9) Do you teach at off-campus sites, such as high tech centers or by way of distance education?  
   a) Yes   b) No  

10) Which subject area do you mainly teach?  
   a) Math  
   b) Science  
   c) Logic and computer science  
   d) Social science  
   e) English  
   f) Humanities  
   g) Fine arts  
   h) Physical education  
   i) Business  
   j) Vocational  
   k) Other, please specify ____________________________  

11) What level of classes do you currently teach (Check all that apply)?  
   a) Remedial (below 100's)  
   b) 100's  
   c) 200's  

12) On the average, how many students do you teach per class?  
   a) Under 10  
   b) 11 to 20  
   c) 21 to 30  
   d) 31 to 40  
   e) 41 to 50  
   f) Over 50  

13) Where did you learn about teaching techniques?  
   a) Through a teaching and learning center on campus  
   b) Through personal experiences  
   c) Through a formal educational course or program  
   d) Through seminars or workshops  
   e) From colleagues  
   f) From former teachers  
   g) Other, please specify ____________________________  

14) Where did you learn about testing techniques?  
   a) Through a teaching and learning center on campus  
   b) Through personal experiences  
   c) Through a formal educational course or program  
   d) Through seminars or workshops  
   e) From colleagues  
   f) From former teachers  
   g) Other, please specify ____________________________  

15) Years of teaching experience (overall)  
   a) Less than 3  
   b) 3-7  
   c) 8-15  
   d) More than 15
II. Instructional Techniques Used in Classes

16) Thinking of one of your typical classes, what percentage of time do you spend on each of the techniques listed below?

<table>
<thead>
<tr>
<th>Technique</th>
<th>&lt; 10%</th>
<th>11-25%</th>
<th>26-50%</th>
<th>51-75%</th>
<th>&gt; 75%</th>
</tr>
</thead>
<tbody>
<tr>
<td>A) Lectures</td>
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<td>B) Discussion</td>
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<td>C) Lab Teaching</td>
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<td>D) Videos or DVD's/</td>
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<td>computer simulat.</td>
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<td>E) Slide/Powerpoint presentations</td>
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<td>F) Distance learning</td>
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<td>G) Other</td>
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</tbody>
</table>

III. Assessment Formats

17) On average, what percentage of your course grade do you based on each of the techniques listed below?

<table>
<thead>
<tr>
<th>Technique</th>
<th>&lt; 10%</th>
<th>11-25%</th>
<th>26-50%</th>
<th>51-75%</th>
<th>&gt; 75%</th>
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</thead>
<tbody>
<tr>
<td>A) Attendance/Part.</td>
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<tr>
<td>B) Quizzes</td>
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<td>C) Multiple-choice exams</td>
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<td>D) Essay exams</td>
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<td>E) Lab practicals</td>
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<td>F) Workbook</td>
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<td>G) Oral presentat.</td>
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<td>H) Research assign.</td>
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<tr>
<td>I) Portfolios</td>
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<td>J) Other</td>
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</table>
IV. Course Objectives

18) How important are each of the strategies listed below in attaining your course objectives?

Please circle your response using the 1-4 scale
1 = Very unimportant
2 = Unimportant
3 = Somewhat important
4 = Very important

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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</thead>
<tbody>
<tr>
<td>A) Mastery of skills/concepts</td>
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<tr>
<td>B) Recall of factual info.</td>
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<tr>
<td>C) Understanding material</td>
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<tr>
<td>D) Critical thinking</td>
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<td>E) Ability to integrate ideas</td>
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<tr>
<td>F) Application of theories</td>
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<tr>
<td>G) Other (please specify)</td>
<td></td>
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</tbody>
</table>
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VITA
Graduate College
University of Nevada, Las Vegas
Simon A. Lei

Home Address:
9611 Stoney Creek Drive
Las Vegas, NV 89117

Degrees:
Bachelor of Science, Biology/Ecology, 1990
College of Charleston

Master of Science, Biology/Ecology, 1995
University of Nevada, Las Vegas

Special Honors and Awards:
Graduate Student Association Research Grant, UNLV, 1994 and 2003.
Beyond the Classroom: Recognizing the 2001 Accomplishments of CCSN Faculty, 2002.
Department of Biological Sciences Travel Fund, UNLV, 1994 and 1995.
Graduate College Research Grant, UNLV, 1993.
Graduate Teaching Assistantship, UNLV, 1993.

Publications:
Developing and posting online course information for EPY 451 and 702 (UNLV) and SSK 109 (CCSN), 2003.
Publishing 34 peer-reviewed, biological journal and symposium articles, 1995 - present.
Publishing 36 biological and educational abstracts at the national and international level, 1993 - present.
Published two (2) lecture outlines and two (2) lecture notes for biology and environmental science courses, Bishop Gorman High School, 2000 and 2001.
Dissertation Title: Teaching and Assessment Practices of Instructors in Two Public Community Colleges in Nevada

Dissertation Examination Committee:
Chairperson, Dr. Paul Meacham, Ph.D.
Committee Member, Dr. Dale Andersen, Ed.D.
Committee Member, Dr. Clifford McClain, Ph.D.
Graduate Faculty Representative, Dr. Rodney Metcalf, Ph.D.